

Page 2

Commissioner Carlos Marin

(NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

A Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* on September 24, 2007. A copy of the NOI is enclosed, which provides additional information about the proposed project, background information, and the framework for Federal environmental review requirements under NEPA.

Your agency has been identified as a Federal authority with responsibilities for resources that may be affected by the Proposed Action. In accordance with the Council on Environmental Quality (CEQ) regulations addressing cooperating agencies (40 CFR 1501.6 and 1508.5) and CEQ's January 30, 2002, guidance, CBP is inviting you to participate in the development of the EA as a cooperating agency. Please contact Mr. Charles McGregor of the USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O Box 17300, Fort Worth, Texas 76102-0300 if your agency would like to be a cooperating agency.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Charles McGregor at (817) 886-1585 or Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at 619-216-4028.

Sincerely,



Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure



OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

October 15, 2007

United States Customs and Border Protection
San Diego Tactical Infrastructure EIS
c/o e²M
2751 Prosperity Avenue, Suite 200
Fairfax, Virginia 22031

Dear Customs Border Protection:

Thank you for the opportunity to comment on the notice of intent (NOI) to prepare an Environmental Impact Statement (EIS) on proposed construction and operation of tactical infrastructure for the United States Customs and Border Protection (CBP) in the vicinity of the Otay Mountain Wilderness Area and just west of Tecate. The United States Section, International Boundary and Water Commission (USIBWC), has reviewed the NOI dated September 24, 2007, and offers the following comments for your use.

As indicated in previous correspondence related to CBP fence projects, the USIBWC requests that proposed construction activities be accomplished in a manner that does not change historic surface runoff characteristics at the international border. If the project falls within USIBWC jurisdiction or property, the USIBWC will not approve any construction near the international boundary in the United States that increases, concentrates, or relocates overland drainage flows into either country. This requirement is intended to ensure that developments in one country will not cause damage to lands or resources in the other country as required by the 1970 Treaty. We also request that you ensure that structures constructed along the border are maintained in an adequate manner and that liability issues created by these structures are addressed.

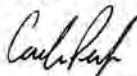
As with previous work by Border Patrol along the international boundary, the USIBWC requires that proposed works and related facilities not affect the permanence of existing boundary monuments and not impede access for their maintenance by USIBWC personnel. Any proposed construction must allow for line-of-sight visibility between each of the boundary monuments. The USIBWC requests that engineering drawings be submitted for review and approval before beginning construction on USIBWC jurisdictional property. The drawings must show the location of each component in relationship to the international boundary and nearby monuments.

In order to avoid any confusion and to allow better coordination, the USIBWC requests that a table be added to the Cumulative Effects Section that lists all the border fence projects, by state, that are being programmed for construction. This is due to the overwhelming amount of projects by the Border Patrol along the international border. For your information, the USIBWC has designated Mr. Richard Peace, Division Engineer, Operations and Maintenance Division as the agency single point of contact for border fence and other border security projects. Any future correspondence should be addressed to Mr. Peace at the letterhead address.

The Commons, Building C, Suite 100 • 4171 N. Mesa Street • El Paso, Texas 79902
(915) 832-4100 • (FAX) (915) 832-4190 • <http://www.ibwc.state.gov>

If you have any questions regarding these comments, please contact Mr. Richard Peace at (915) 832-4158.

Sincerely,



Carlos Peña, Jr., P.E.
Division Engineer
Environmental Management Division

<p style="text-align: center;">Memorandum of Understanding Among U. S. Department of Homeland Security and U. S. Department of the Interior and U. S. Department of Agriculture Regarding Cooperative National Security and Counterterrorism Efforts on Federal Lands along the United States' Borders</p>	<p style="text-align: center;">I. Purpose and Scope</p> <p>A. This Memorandum of Understanding (MOU) is made and entered into by the Department of Homeland Security (DHS), including and on behalf of its constituent bureau U.S. Customs and Border Protection (CBP) and the CBP Office of Border Patrol (CBP-BP); the Department of the Interior (DOI), including and on behalf of its constituent bureaus, the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), and the Bureau of Reclamation (BOR); and the Department of Agriculture (USDA), including and on behalf of its constituent agency the U.S. Forest Service (USFS). Throughout this MOU, these three Departments, including their constituent agencies, may be referred to as "the Parties." Any reference to a bureau, agency, or constituent component of a Party shall not be deemed to exclude application to any appropriate bureau or constituent component of that Party. DHS recognizes that the BIA enters into this agreement only on its own behalf and not on behalf of any Indian tribe.</p> <p>B. The geographic and jurisdictional scope of this MOU is nationwide. The Parties recognize the national security and counterterrorism significance of preventing illegal entry into the United States by cross-border violators (CBVs), including but not limited to the following: drug and human smugglers and smuggling organizations, foreign nationals, and terrorists and terrorist organizations. The Parties further recognize that damage to DOI and USDA-managed lands and natural and cultural resources is often a significant consequence of such illegal entry. The Parties are committed to preventing illegal entry into the United States, protecting Federal lands and natural and cultural resources, and - where possible - preventing adverse impacts associated with illegal entry by CBVs.</p> <p>C. This MOU is intended to provide consistent goals, principles, and guidance related to border security, such as law enforcement operations; tactical infrastructure installation; utilization of roads; minimization and/or prevention of significant impact on or impairment of natural and cultural resources; implementation of the Wilderness Act, Endangered Species Act, and other related environmental law, regulation, and policy across land management agencies; and provide for coordination and sharing information</p>
<p>on threat assessments and other risks, plans for infrastructure and technology improvements on Federal lands, and operational and law enforcement staffing changes. This MOU provides guidance in the development of individual agreements, where appropriate, between CBP and land management agencies to further the provisions contained herein.</p> <p>D. This MOU is entered into pursuant to the governing statutory authorities of each of the Parties.</p> <p>E. The Parties acknowledge that CBP operation and construction within the sixty-foot "Roosevelt Reservation" of May 27 1907 (along the US-Mexico border) and the sixty-foot "Taft Reservation" of May 3, 1912 (along the US-Canada border) is consistent with the purpose of those reservations and that any CBP activity (including, but not limited to, operations and construction) within the sixty-foot reservations is outside the oversight or control of Federal land managers.</p> <p>F. This MOU supersedes any conflicting provision of any prior MOU or Memorandum of Agreement between the Parties or their subordinate bureaus or components.</p>	<p style="text-align: center;">II. Background</p> <p>A. DHS, through its constituent bureaus (including CBP and its CBP-BP), is statutorily mandated to control and guard the Nation's borders and boundaries, including the entirety of the northern and southern land and water borders of the United States.</p> <p>B. DOI and USDA, through their constituent bureaus, are statutorily charged as managers of Federal lands throughout the United States, including DOI and USDA lands in the vicinity of international borders that are administered as wilderness areas, conservation areas, national forests, wildlife refuges, units/irrigation projects of the Bureau of Reclamation, and/or units of the national park system. Tribal governments have primary management roles over tribal lands; however, the United States, through the BIA, may also have a stewardship or law enforcement responsibility over these lands. Many of these Federal and tribal lands contain natural and cultural resources that are being degraded by activities related to illegal cross-border movements.</p> <p>C. The volume of CBVs can and has, in certain areas, overwhelmed the law enforcement and administrative resources of Federal land managers. In order to more effectively protect national security, respond to terrorist threats, safeguard human life, and stop the degradation of the natural and cultural resources on those lands, DOI and USDA land managers will work cooperatively with CBP to benefit from the enforcement presence, terrorist and CBV interdiction, and rescue operations of CBP.</p>

<p>III. Common Findings and Affirmation of the Parties</p> <p>A. The Parties to this MOU recognize that CBP-BP access to Federal lands can facilitate rescue of CBVs on Federal lands, protect those lands from environmental damage, have a role in protecting the wilderness and cultural values and wildlife resources of these lands, and is necessary for the security of the United States. Accordingly, the Parties understand that CBP-BP, consistent with applicable Federal laws and regulations, may access public lands and waterways, including access for purposes of tracking, surveillance, interdiction, establishment of observation points, and installation of remote detection systems.</p> <p>B. The Parties recognize that DOI and USDA have responsibility for enforcing Federal laws relating to land management, resource protection, and other such functions on Federal lands under their jurisdiction.</p> <p>IV. Responsibilities and Terms of Agreement</p> <p>A. The Parties Agree to the Following Common Goals, Policies, and Principles:</p> <ol style="list-style-type: none"> 1. The Parties enter into this MOU in a cooperative spirit with the goals of securing the borders of the United States, addressing emergencies involving human health and safety, and preventing or minimizing environmental damage arising from CBV illegal entry on public lands; 2. The Parties will strive to both resolve conflicts at and delegate resolution authority to the lowest field operational level possible while applying the principles of this MOU in such manner as will be consistent with the spirit and intent of this MOU; 3. The Parties will develop and consistently utilize an efficient communication protocol respecting the chain of command for each of the Parties that will result in the consistent application of the goals, policies, and principles articulated in this MOU, and provide a mechanism that will, if necessary, facilitate the resolution of any conflicts among the Parties. If resolution of conflict does not occur at the local level, then the issue will be elevated first to the regional/sector office; if not resolved at the regional/sector level, then the issue will be elevated to the headquarters level for resolution; 4. The Parties will cooperate with each other to complete, in an expedient manner, all compliance that is required by applicable Federal laws not otherwise waived in furtherance of this MOU. If such activities are authorized by a local agreement as described in sub-article IV.B below, then the DOI, USDA, and CBP will complete the required compliance before executing the agreement; 	<ol style="list-style-type: none"> 5. The Parties will cooperate with each other to identify methods, routes, and locations for CBP-BP operations that will minimize impacts to natural, cultural, and wilderness resources resulting from CBP-BP operations while facilitating needed CBP-BP access; 6. The Parties will, as necessary, plan and conduct joint local law enforcement operations consistent with all Parties' legal authorities; 7. The Parties will establish a framework by which threat assessments and other intelligence information may be exchanged, including intelligence training to be conducted by all parties so that the intelligence requirements of each may be identified and facilitated; 8. The Parties will establish forums and meet as needed at the local, regional, and national levels to facilitate working relationships and communication between all Parties; 9. The Parties will develop and share joint operational strategies at the local, regional, and national levels, including joint requests for infrastructure and other shared areas of responsibility; 10. The Parties will share the cost of environmental and cultural awareness training unless otherwise agreed; and 11. The Parties will, as appropriate, enter into specific reimbursable agreements pursuant to the Economy Act, 31 U.S.C. §1535 when one party is to furnish materials or perform work or provide a service on behalf of another party. <p>B. Responsibilities and Terms Specific to DOI and USDA. The DOI and the USDA hereby recognize that, pursuant to applicable law, CBP-BP is authorized to access the Federal lands under DOI and USDA administrative jurisdiction, including areas designated by Congress as wilderness, recommended as wilderness, and/or wilderness study areas, and will do so in accordance with the following conditions and existing authorities:</p> <ol style="list-style-type: none"> 1. CBP-BP agents on foot or on horseback may patrol, or pursue, or apprehend suspected CBVs off-road at any time on any Federal lands administered by the Parties; 2. CBP-BP may operate motor vehicles on existing public and administrative roads and/or trails and in areas previously designated by the land management agency for off-road vehicle use at any time, provided that such use is consistent with presently authorized public or administrative use. At CBP-BP's request, the DOI and the USDA will provide CBP-BP with keys, combinations, or other means necessary to
<p>- 3 -</p>	<p>- 4 -</p>

<p>access secured administrative roads/trails. CBP-BP may ding existing public and administrative roads that are unpaved for the purpose of cutting sign, subject to compliance with conditions that are mutually agreed upon by the local Federal land manager and the CBP-BP Sector Chief. For purposes of this MOU, "existing public roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows members of the general public to operate motor vehicles, and "existing administrative roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows persons specially authorized by the agency, but not members of the general public, to operate motor vehicles;</p>	<p>3. CBP-BP may request, in writing, that the land management agency grant additional access to Federal lands (for example, to areas not previously designated by the land management agency for off-road use) administered by the DOI or the USDA for such purposes as routine patrols, non-emergency operational access, and establishment of temporary camps or other operational activities. The request will describe the specific lands and/or routes that the CBP-BP wishes to access and the specific means of access desired. After receiving a written request, the local Federal land manager will meet promptly with the CBP-BP Sector Chief to begin discussing the request and negotiating the terms and conditions of an agreement with the local land management agency that authorizes access to the extent permitted by the laws applicable to the particular Federal lands. In each agreement between CBP-BP and the local land management agency, the CBP-BP should be required to use the lowest impact mode of travel and operational setup reasonable and practicable to accomplish its mission. The CBP-BP should also be required to operate all motorized vehicles and temporary operational activities in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands. However, at no time should officer safety be compromised when selecting the least impactful conveyance or operational activity. Recognizing the importance of this matter to the Nation's security, the CBP-BP Sector Chief and the local Federal land manager will devote to this endeavor the resources necessary to complete required compliance measures in order to execute the local agreement within ninety (90) days after the Federal land manager has received the written request for access. Nothing in this paragraph is intended to limit the exercise of applicable emergency authorities for access prior to the execution of the local agreement. The Secretaries of the Interior, Agriculture, and Homeland Security expect that, absent compelling justification, each local agreement will be executed within that time frame and provide the maximum amount of access requested by the CBP-BP and allowed by law;</p>
<p>4. Nothing in this MOU is intended to prevent CBP-BP agents from exercising existing exigent/emergency authorities to access lands, including authority to conduct motorized off-road pursuit of suspected CBVs at any time, including in areas designated or recommended as wilderness, or in wilderness study areas when, in their professional judgment based on articulated facts, there is a specific exigency/emergency involving human life, health, safety within the area, or posing a threat to national security, and they conclude that such motorized off-road pursuit is reasonably expected to result in the apprehension of the suspected CBVs. Articulated facts include, but are not limited to, visual observation; information received from a remote sensor, video camera, scope, or other technological source; fresh "sign" or other physical indication; canine alert; or classified or unclassified intelligence. For each such motorized off-road pursuit, CBP-BP will use the least intrusive or damaging motorized vehicle readily available, without compromising agent or officer safety. In accordance with paragraph IV.C.4, as soon as practicable after each such motorized off-road pursuit, CBP-BP will provide the local Federal land manager with a brief report;</p>	<p>5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources, or if other significant issues warrant consultation, then the Federal land manager and the CBP-BP will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;</p> <p>6. CBP may request, in writing, that the land management agency authorize installation or construction of tactical infrastructure for detection of CBVs (including, but not limited to, observation points, remote video surveillance systems motion sensors, vehicle barriers, fences, roads, and detection devices) on land under the local land management agency's administrative jurisdiction. In areas not designated as wilderness, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency. In areas designated or managed as wilderness, the local Federal land manager, in consultation with CBP, will promptly conduct a "minimum requirement," minimum tool, or other appropriate analysis. If supported by such analysis, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency;</p>

<p>7. The DOI and USDA will provide CBP-BP agents with appropriate environmental and cultural awareness training formatted to meet CBP-BP operational constraints. The DOI and USDA will work with CBP-BP in the development and production of maps for use or reference by CBP-BP agents including, as appropriate, site-specific and resource-specific maps that will identify specific wildlife and environmentally or culturally sensitive areas;</p> <p>8. The DOI and USDA will, as applicable, provide CBP-BP with all assessments and studies done by or on behalf of DOI or USDA on the effects of CBVs on Federal lands and native species to better analyze the value of preventative enforcement actions;</p> <p>9. The DOI and USDA will assist CBP-BP in search and rescue operations on lands within the respective land managers' administration when requested;</p> <p>10. The CBP-BP and land management agencies may cross-deputize or cross-designate their agents as law enforcement officers under each other agency's statutory authority. Such cross-deputization or cross-designation agreements entered into by the local land management agency and the field operations manager for the CBP-BP shall be pursuant to the policies and procedures of each agency; and</p> <p>11. DOI and USDA will work at the field operations level with affected local CBP-BP stations to establish protocols for notifying CBP-BP agents when DOI or USDA law enforcement personnel are conducting law enforcement operations in an area where CBP-BP and DOI/USDA operations can or will overlap.</p>	<p>paragraph IV.B.5, then the CBP-BP will use the lowest impact mode of travel practicable to accomplish its mission and operate all motorized vehicles in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands, provided officer safety is not compromised by the type of conveyance selected;</p> <p>4. CBP-BP will notify the local Federal land manager of any motorized emergency pursuit, apprehension, or incursion in a wilderness area or off-road in an area not designated for such use as soon as is practicable. A verbal report is sufficient unless either CBP-BP or the land managing agency determines that significant impacts resulted, in which case a written report will be necessary;</p> <p>5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources as determined by a land manager, or if other significant issues warrant consultation, then the CBP-BP and Federal land manager will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;</p> <p>6. CBP will consult with land managers to coordinate the placement and maintenance of tactical infrastructure, permanent and temporary video, seismic and other remote sensing sites in order to limit resource damage while maintaining operational efficiency;</p> <p>7. CBP-BP will ensure that current and incoming CBP-BP agents attend environmental and cultural awareness training to be provided by the land management agencies;</p> <p>8. CBP-BP will provide land management agencies with appropriate and relevant releasable statistics of monthly CBV apprehensions, search and rescue actions, casualties, vehicles seized, drug seizures, and arrests, weapons seizures and arrests, and other significant statistics regarding occurrences on the lands managed by the land manager;</p> <p>9. CBP-BP will consult with land managers in the development of CBP-BP's annual Operational Requirements Based Budgeting Program to ensure affected land managers can provide input and are, in the early stages of planning, made aware what personnel, infrastructure, and technology the CBP-BP would like to deploy along the border within their area of operation; and</p> <p>10. CBP-BP will work at the field operations manager level with affected local land management agencies to establish protocols for notifying</p>
<p>C. <u>Responsibilities and Terms Specific to the CBP.</u> DHS hereby agrees as follows:</p> <p>1. Consistent with the Border Patrol Strategic Plan, CBP-BP will strive to interdict CBVs as close to the United States' international borders as is operationally practical, with the long-term goal of establishing operational control along the immediate borders;</p> <p>2. If the CBP-BP drag any unpaved roads for the purpose of cutting sign under provision IV.B.2 above, then CBP-BP will maintain or repair such roads to the extent that they are damaged by CBP-BP's use or activities;</p> <p>3. If CBP-BP agents pursue or apprehend suspected CBVs in wilderness areas or off-road in an area not designated for such use under</p>	<p>- 7 -</p>

land management agency law enforcement officers when BP is conducting special operations or non-routine activities in a particular area.

V. Miscellaneous Provisions

A. Nothing in this MOU may be construed to obligate the agencies or the United States to any current or future expenditure of funds in advance of the availability of appropriations, nor does this MOU obligate the agencies or the United States to spend funds for any particular project or purpose, even if funds are available.

B. Nothing in this MOU will be construed as affecting the authority of the Parties in carrying out their statutory responsibilities.

C. This MOU may be modified or amended in writing upon consent of all Parties, and other affected Federal agencies may seek to become a Party to this MOU.

D. The Parties shall retain all applicable legal responsibility for their respective personnel working pursuant to this MOU with respect to, *inter alia*, pay, personnel benefits, injuries, accidents, losses, damages, and civil liability. This MOU is not intended to change in any way the individual employee status or the liability or responsibility of any Party under Federal law.

E. The Parties agree to participate in this MOU until its termination. Any Party wishing to terminate its participation in this MOU shall provide sixty (60) days written notice to all other Parties.

F. This document is an intra-governmental agreement among the Parties and does not create or confer any rights, privileges, or benefits upon any person, party, or entity. This MOU is not and shall not be construed as a rule or regulation.

- 9 -

In witness whereof, the Parties hereto have caused this Memorandum of Understanding to be executed and effective as of the date of the last signature below.

Date: 3/24/06

Secretary of Homeland Security

Date: 3/31/06

Secretary of the Interior

Date: 3/29/06

Secretary of Agriculture

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APPENDIX D

Public Comments on the Draft EIS (Reserved Space)



***COMMENTS ON THE DRAFT EIS WILL BE
INCLUDED IN THIS APPENDIX ONCE RECEIVED.***

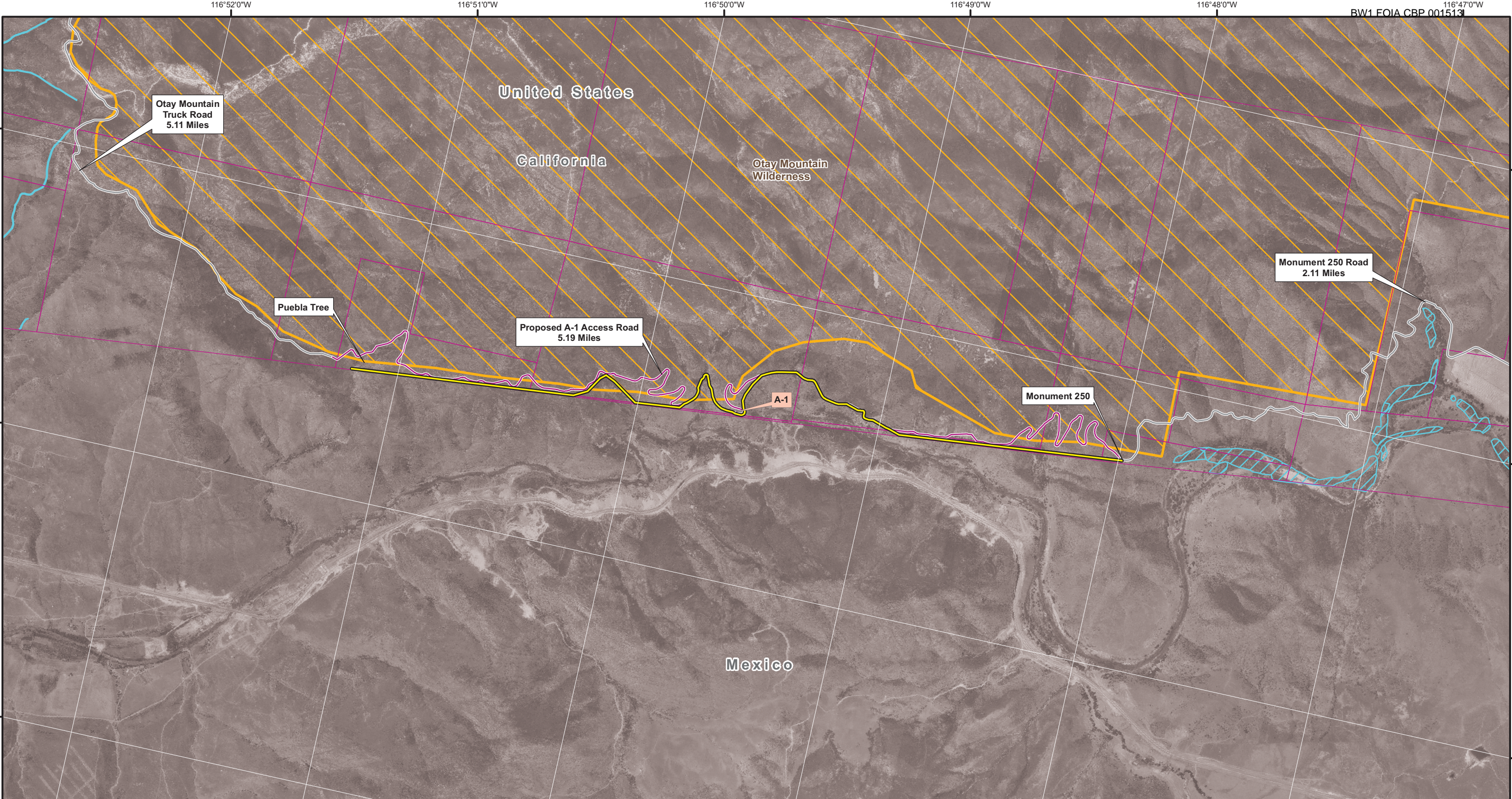
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APPENDIX E

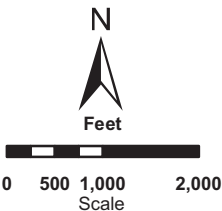
Detailed Maps of the Proposed Tactical
Infrastructure Sections Showing Land Use
and Water





BW1 FOIA CBP 001513

- Proposed Fence Route
- Proposed A-1 Access Road Route
- Existing Access Roads
- Land Parcels
- National Wetlands Inventory
- Otay Mountain Wilderness



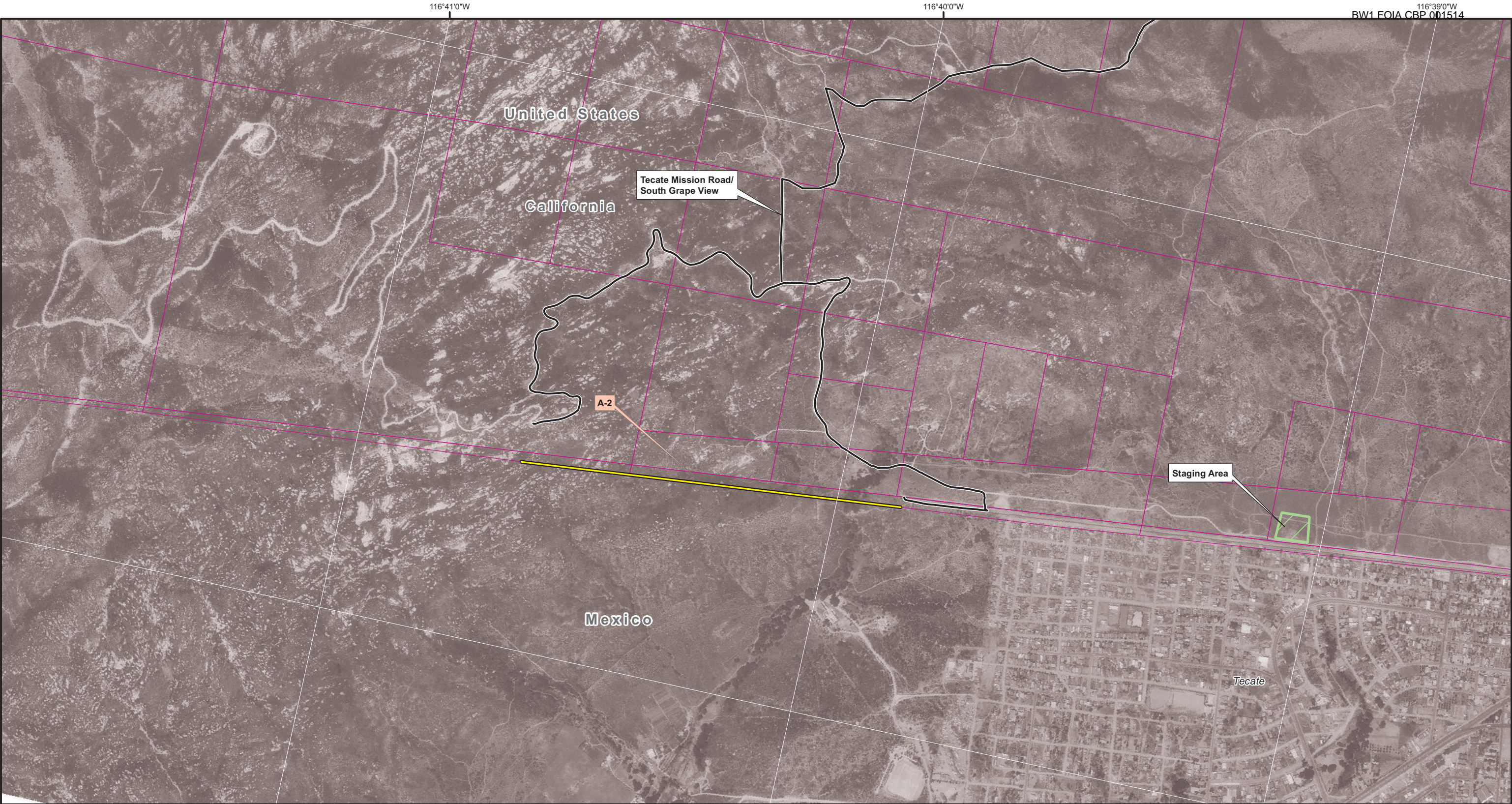
USBP
Proposed Tactical Infrastructure EIS
San Diego Sector, Texas
Detailed Proposed
Fence Section Maps

Projection: Albers
USA Contiguous Albers Equal Area Conic
North American Datum of 1983

December 2007

Scale 1" = 2000'

Map 1 of 2



<ul style="list-style-type: none">Proposed Fence RouteExisting Access RoadsProposed Construction Staging AreaLand Parcels	<p>N</p> <p>Feet</p> <p>0 250 500 1,000</p> <p>Scale</p>		<table border="1"><tr><td data-bbox="2533 1612 2688 1864"></td><td data-bbox="2688 1612 3017 1864"><p>USBP Proposed Tactical Infrastructure EIS San Diego Sector, Texas Detailed Proposed Fence Section Maps</p></td></tr><tr><td data-bbox="2533 1864 2688 1923"><p>December 2007</p></td><td data-bbox="2688 1864 3017 1923"><table border="1"><tr><td data-bbox="2688 1864 2843 1923"><p>Scale 1" = 1000'</p></td><td data-bbox="2843 1864 3017 1923"><p>Map 2 of 2</p></td></tr></table></td></tr></table>		<p>USBP Proposed Tactical Infrastructure EIS San Diego Sector, Texas Detailed Proposed Fence Section Maps</p>	<p>December 2007</p>	<table border="1"><tr><td data-bbox="2688 1864 2843 1923"><p>Scale 1" = 1000'</p></td><td data-bbox="2843 1864 3017 1923"><p>Map 2 of 2</p></td></tr></table>	<p>Scale 1" = 1000'</p>	<p>Map 2 of 2</p>
	<p>USBP Proposed Tactical Infrastructure EIS San Diego Sector, Texas Detailed Proposed Fence Section Maps</p>								
<p>December 2007</p>	<table border="1"><tr><td data-bbox="2688 1864 2843 1923"><p>Scale 1" = 1000'</p></td><td data-bbox="2843 1864 3017 1923"><p>Map 2 of 2</p></td></tr></table>	<p>Scale 1" = 1000'</p>	<p>Map 2 of 2</p>						
<p>Scale 1" = 1000'</p>	<p>Map 2 of 2</p>								



APPENDIX F

Air Quality Information



APPENDIX F

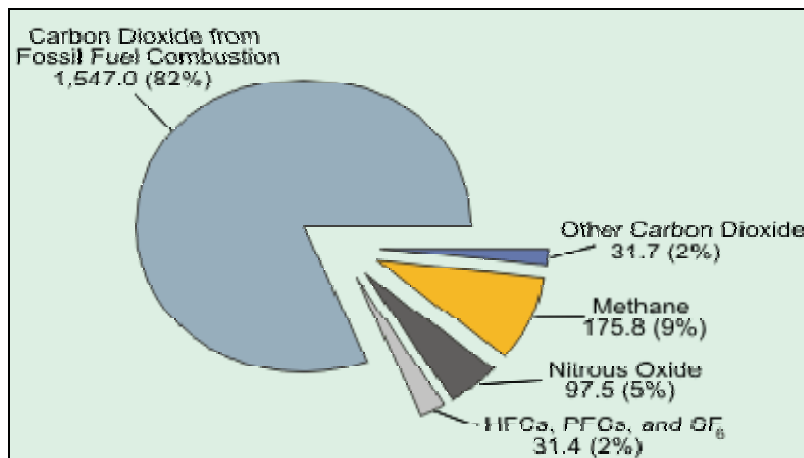
AIR QUALITY INFORMATION

Greenhouse Gases

In April 2007, the U.S. Supreme Court declared that carbon dioxide (CO₂) and other greenhouse gases are air pollutants under the Clean Air Act (CAA). The Court declared that the U.S. Environmental Protection Agency (USEPA) has the authority to regulate emissions from new cars and trucks under the landmark environment law.

Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases." These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the trapped heat results in the phenomenon of global warming.

Many gases exhibit these "greenhouse" properties. The sources of the majority of greenhouse gases come mostly from natural sources but are also contributed to by human activity and are shown in **Figure F-1**. It is not possible to state that a specific gas causes a certain percentage of the greenhouse effect because the influences of the various gases are not additive.

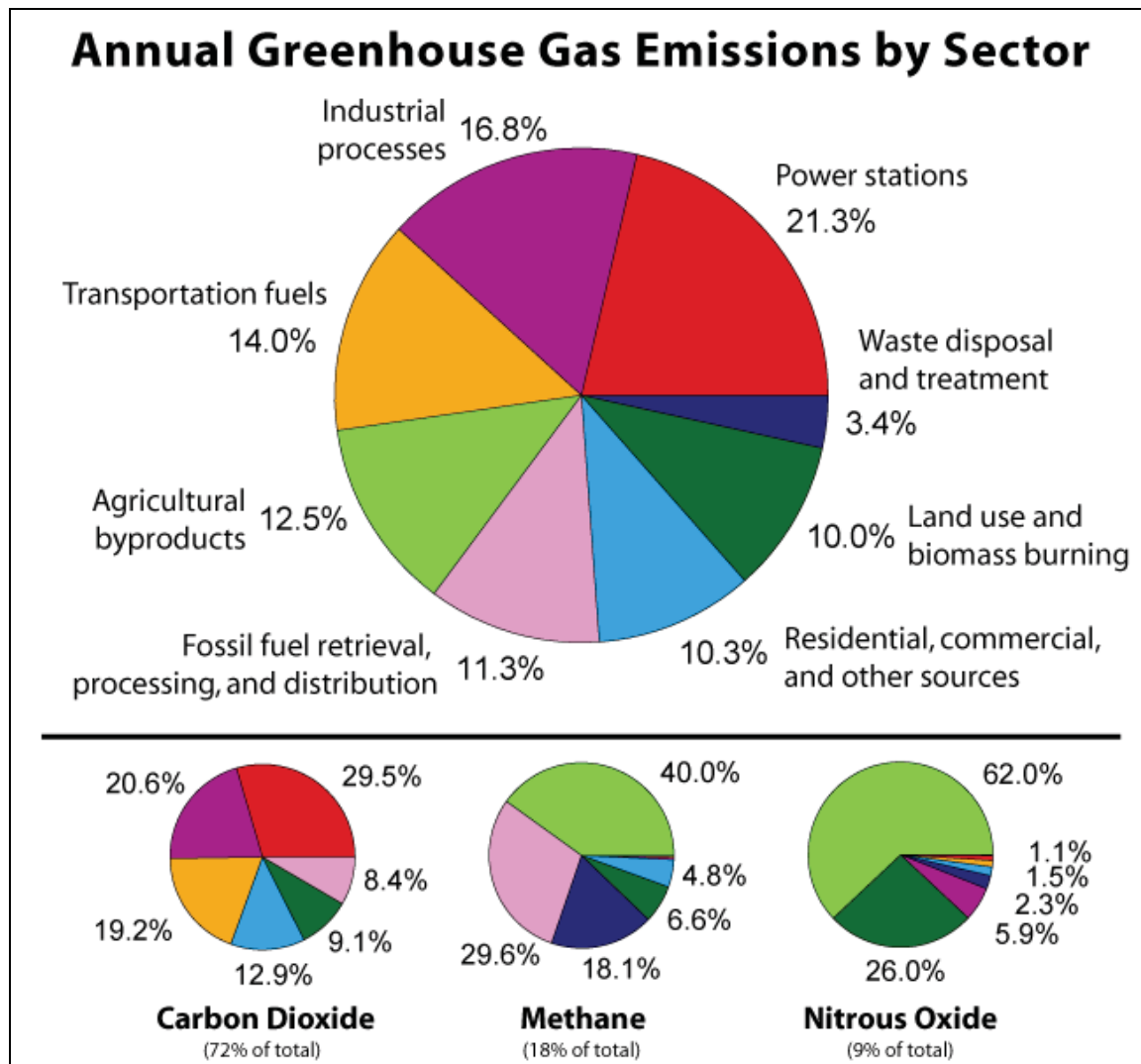


Source: Energy Information Administration 2003

**Figure F-1. Greenhouse Gas Emissions From Burning of Gas
(Million Metric Tons of Carbon Equivalent)**

Figure F-2 displays the annual greenhouse gas emissions by sector in the United States. Most government agencies and military installations are just beginning to establish a baseline for their operations and their impact on the greenhouse effect. Since the USEPA has not promulgated an ambient standard or *de minimis* level for CO₂ emissions for Federal actions, there is no standard value to compare an action against

in terms of meeting or violating the standard. Hence, we shall attempt to establish the effects on air quality as a result of the amount of CO₂ produced by the Federal action and what could be done to minimize the impact of these emissions.



Source: Rosmarino 2006

Figure F-2. Annual Greenhouse Gas Emissions by Sector

References

Energy Information Administration. 2003. "Greenhouse Gases, Climate Change, and Energy." EIA Brochure. 2003. Available online: <<http://www.eia.doe.gov/oiaf/1605/ggccebro/chapter1.html>>. Last updated April 2, 2004. Accessed November 4, 2007.

Tanyalynnette Rosmarino, Director of Field Engineering, Northeast, BigFix, Inc. 2006. "A Self-Funding Enterprise Solution to Reduce Power Consumption and Carbon Emissions." Slide presentation for the NYS Forum's May Executive Committee Meeting Building an Energy Smart IT Environment. 2006. Available online: <http://www.nysforum.org/documents/html/2007/execommittee/may/enterprisepowerconsumptionreduction_files/800x600/slide1.html>. Accessed November 4, 2007.

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Summary	Summarizes total emissions by calendar year.
Combustion	Estimates emissions from non-road equipment exhaust as well as painting.
Fugitive	Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions
Maintenance Emissions	Estimates the total emissions from future maintenance of fencelines and access roads from mowers.
Generator Emissions	Estimates the total emissions from emergency generators to power construction equipment.
AQCR Tier Report	Summarizes total emissions for the San Diego Intrastate AQCR Tier Reports for 2001 , to be used to compare project to regional emissions.

Air Quality Emissions from Proposed Action

CY2008

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	CO ₂ (ton)
Construction Combustion	56.743	8.459	66.291	1.135	1.904	46.800
Construction Fugitive Dust	0.000	0.000	0.000	0.000	54.835	-
Haul Trucks	0.572	0.176	0.959	0.045	0.680	19.458
Generator Emissions	14.702	1.200	3.167	0.967	1.034	274.312
TOTAL CY2008	72.017	9.835	70.417	2.147	58.453	340.570

Since future year budgets were not readily available, actual 2001 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the Proposed Action is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

San Diego Intrastate AQCR

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)
2001	76,343	95,371	605,178	2,007	72,011

Source: USEPA-AirData NET Tier Report (<http://www.epa.gov/air/data/geosel.html>). Site visited on 17 October 2007.

Determination Significance (Significance Threshold = 10%) for Construction Activities

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)
76,343	95,371	605,178	2,007	72,011
72,017	9,835	70,417	2,147	58,453
0.094%	0.010%	0.012%	0.107%	0.081%

Minimum - 2001
2008 Emissions
Proposed Action %

Construction Combustion Emissions for CY 2008

Combustion Emissions of VOC, NO_x, SO₂, CO and PM₁₀ Due to Construction

Includes:

100% of Construct Pedestrian Fence A-1	653,400 ft ²	15.00	acres
100% of Construct Pedestrian Fence A-2	221,760 ft ²	5.09	acres
100% of Excavate Cut/Fill Limits	1,742,400 ft ²	40.00	acres
100% of Pavement Access Road	31,680 ft ²	0.73	acres
100% of Grade Access Road	30,413 ft ²	0.70	acres
100% of Grade Staging Areas	1,102,068 ft ²	25.30	acres
Construction area planned per month	315,143 ft ²	7.23	acres

Assumptions:

Total ground disturbance for pedestrian fence A-1 would be 15 acres .
 Total ground disturbance for pedestrian fence A-2 would be 3,696 feet long by 60 feet wide (221,760 ft²).
 Total ground disturbance for excavation areas for cut and fill operations would be 40 acres .
 Total ground disturbance for staging areas would be 25.30 acres.
 New access road would be graded and lined with gravel for 0.24 miles and paved for 0.25 miles. Access road is 24 feet wide.
 Construction would occur in Calendar Year 2008 for a total of 240 working days (Assumes working 7 days/week).

Total Building Construction Area:	0 ft ²
Total Demolished Area:	0 ft ²
Total Paved Area:	31,680 ft ²
Total Disturbed Area:	3,781,721 ft ²
Construction Duration:	1.0 year(s)
Annual Construction Activity:	240 days/yr

Emission Factors Used for Construction Equipment

Reference: Guide to Air Quality Assessment, SMAQMD, 2004

Emission factors are taken from Table 3-2. Assumptions regarding the type and number of equipment are from Table 3-1 unless otherwise noted.

Grading

Equipment	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Bulldozer	1	29.40	3.66	25.09	0.59	1.17
Motor Grader	1	10.22	1.76	14.98	0.20	0.28
Water Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	3	60.51	9.02	70.69	1.21	2.03

Paving

Equipment	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Paver	1	7.93	1.37	11.62	0.16	0.22
Roller	1	5.01	0.86	7.34	0.10	0.14
Total per 10 acres of activity	2	12.94	2.23	18.96	0.26	0.36

Demolition

Equipment	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Loader	1	7.86	1.35	11.52	0.16	0.22
Haul Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	2	28.75	4.95	42.14	0.58	0.80

Building Construction

Equipment ^d	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Stationary						
Generator Set	1	11.83	1.47	10.09	0.24	0.47
Industrial Saw	1	17.02	2.12	14.52	0.34	0.68
Welder	1	4.48	0.56	3.83	0.09	0.18
Mobile (non-road)						
Truck	1	20.89	3.60	30.62	0.84	0.58
Forklift	1	4.57	0.79	6.70	0.18	0.13
Crane	1	8.37	1.44	12.27	0.33	0.23
Total per 10 acres of activity	6	67.16	9.98	78.03	2.02	2.27

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment	No. Req'd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Air Compressor	1	6.83	0.85	5.82	0.14	0.27
Total per 10 acres of activity	1	6.83	0.85	5.82	0.14	0.27

- The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC.
- The SMAQMD 2004 reference does not provide SO₂ emission factors. For this worksheet, SO₂ emissions have been estimated based on approximate fuel use rate for diesel equipment and the assumption of 500 ppm sulfur diesel fuel. For the average of the equipment fleet, the resulting SO₂ factor was found to be approximately 0.04 times the NO_x emission factor for the mobile equipment (based upon 2002 USAF IERA "Air Emissions Inventory Guidance") and 0.02 times the NO_x emission factor for all other equipment (based on AP-42, Table 3.4-1)
- Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	SMAQMD Emission Factors (lb/day)				
		NO _x	VOC	CO	SO ₂ **	PM ₁₀
Grading Equipment	9	4727.932	704.775	5523.344	94.559	158.613
Paving Equipment	1	0.941	0.162	1.379	0.019	0.026
Demolition Equipment	1	0.000	0.000	0.000	0.000	0.000
Building Construction	1	0.000	0.000	0.000	0.000	0.000
Air Compressor for Architectural Coating	1	0.000	0.000	0.000	0.000	0.000
Architectural Coating**			0.000			

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 ac*((total disturbed area/43560)/10))*(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days
Grading:	3,781,721	86.82	6
Paving:	31,680	0.73	4
Demolition:	0	0.00	0
Building Construction:	0	0.00	0
Architectural Coating	0	0.00	0

(from "CY2008 Grading" worksheet)

(per the SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Project Emissions per Month (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀
Grading Equipment	28,367.59	4,228.65	33,140.06	567.35	951.68
Paving	3.76	0.65	5.52	0.08	0.10
Demolition	-	-	-	-	-
Building Construction	-	-	-	-	-
Architectural Coatings	-	-	-	-	-
Total Emissions (lbs):	28,371.36	4,229.30	33,145.58	567.43	951.79

Results: Total Project Annual Emissions (4 months of activity)

	NO _x	VOC	CO	SO ₂	PM ₁₀
Total Project Emissions (lbs)	113,485.43	16,917.20	132,582.32	2,269.71	3,807.14
Total Project Emissions (tons)	56.74	8.46	66.29	1.13	1.90

CO₂ Emissions

It is assumed that 20 vehicles consisting of bulldozer, grader, forklift, cranes, rollers, and light duty trucks would be used for this project.

It is further assumed that the total approximate average miles per day per vehicle would be 10 miles.

It is assumed that the average vehicle will produce 19.5 pounds of CO₂ per gallon of gas used. (www.eia.doe.gov/oiaf/1605/coefficients)

Total CO ₂ Emissions for Proposed Action	46,800 tpy
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Example: (20 vehicles) x (10 miles/day/vehicle) x (240 days working) x (1 gal/10 miles) x (19.5 lb CO₂/gal x ton/2000lb) = 46.8 tons CO₂

Construction Fugitive Dust Emissions for CY 2008

Calculation of PM₁₀ Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	86.82 acres/yr	(From "CY2008 Combustion" worksheet)
Grading days/yr:	5.59 days/yr	(From "CY2008 Grading worksheet")
Exposed days/yr:	45 assumed days/yr	graded area is exposed
Grading Hours/day:	8 hr/day	
Soil piles area fraction:	0.10 (assumed)	fraction of site area covered by soil piles)
Soil percent silt, s:	8.5 %	(mean silt content; expected range: 0.56 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	50 %	(http://www.epa.gov/tn/naaqs/areas/areas/windr/23188.gif)
Annual rainfall days, p:	30 days/yr	rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)
Wind speed > 12 mph %, i:	23 %	Ave. of wind speed at San Diego, CA
Fraction of TSP, J:	0.5	per California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993, p. A9-99
Mean vehicle speed, S:	5 mi/hr	(On-site)
Dozer path width:	8 ft	
Qty construction vehicles:	26.04 vehicles	(From "CY2008 Grading worksheet")
On-site VMT/vehicle/day:	5 mi/veh/day	(Excluding bulldozer VMT during grading)
PM ₁₀ Adjustment Factor k	1.5 lb/VMT	(AP-42 Table 13.2.2-2 12/03 for PM ₁₀ for unpaved roads)
PM ₁₀ Adjustment Factor a	0.9 (dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM ₁₀ for unpaved roads)
PM ₁₀ Adjustment Factor b	0.45 (dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM ₁₀ for unpaved roads)
Mean Vehicle Weight W	40 tons	assumed for aggregate trucks

TSP - Total Suspended Particulate
VMT - Vehicle Miles Traveled

Emissions Due to Soil Disturbance Activities

Operation Parameters (Calculated from User Inputs)

Grading duration per acre	0.5 hr/acre	
Bulldozer mileage per acre	1 VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	130 VMT/day	
Construction VMT per acre	8.4 VMT/acre	(Travel on unpaved surfaces within site)

Equations Used (Corrected for PM10)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-1, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-1,
Vehicle Traffic (unpaved roads)	$[(k(s/12)^a (W/3)^b)] [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 10/98 and Section 13.2 dated 12/03

Calculation of PM₁₀ Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)	Operation Parameter	Emission Factor (lbs/ acre)
Bulldozing	0.08 lbs/hr	0.5 hr/acre	0.00 lbs/acre
Grading	0.77 lbs/VMT	1 VMT/acre	0.80 lbs/acre
Vehicle Traffic (unpaved roads)	3.24 lbs/VMT	8.4 VMT/acre	27.20 lbs/acre

Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMMD, 1993.

Soil Piles EF = $1.7(s/1.5)[(365 - p)/235][(1/15)(J) = (s)(365 - p)(I)(J)/(3110.2941)]$, p. A9-99.

Soil Piles EF = 10.5 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)
Soil Piles EF = 1.05 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

Calculation of Annual PM₁₀ Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	Emissions lbs/yr	Emissions tons/yr
Bulldozing	0.00 lbs/acre	86.82	NA	0	0.000
Grading	0.80 lbs/acre	86.82	NA	69	0.035
Vehicle Traffic	27.20 lbs/acre	86.82	NA	2,361	1.181
Erosion of Soil Piles	1.05 lbs/acre/day	86.82	45	4,102	2.051
Erosion of Graded Surface	26.40 lbs/acre/day	86.82	45	103,138	51.569
TOTAL				109,671	54.84

Soil Disturbance EF: 28.00 lbs/acre
Wind Erosion EF: 27.45 lbs/acre/day

Back calculate to get EF: 226.17 lbs/acre/grading day

Construction (Grading) Schedule for CY 2008

Estimate of time required to grade a specified area.

Input Parameters
 Construction area: 86.82 acres/yr (from "CY2008 Combustion" Worksheet)
 Qty Equipment: 26.04 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions.

Terrain is very rough with mountains and switchbacks.
 An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
 200 hp bulldozers are used for site clearing.
 300 hp bulldozers are used for stripping, excavation, and backfill.
 Vibratory drum rollers are used for compaction.
 Stripping, Excavation, Backfill and Compaction require an average of two passes each.
 Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr (project- specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	86.82	10.85
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	86.82	42.44
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	43.41	43.77
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	43.41	17.96
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	86.82	30.45
TOTAL								145.47

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 145.47
 Qty Equipment: 26.04
 Grading days/yr: 5.59

Emissions from Haul Trucks During Cut and Fill Operations

The following table presents preliminary earthwork quantities for the proposed Pack Trail Access Road and Monument 250 Road Upgrades. It is assumed that construction staging areas will require minimal grading so are not included in the earthwork. For the cost estimate it was assumed that 70% of the cut volume will be rock, requiring pneumatic rock hammers and blasting.

Location	Cut Volume (CY)	Fill Volume (CY)	Virgin Volume (CY)	Waste Volume (CY)
Route A-1	253,622	268,764	60,000	60,000
Route A-2	37,500	37,500		
Total	291,122	306,264		

Total Haul Truck Loads for Cut and Fill Volumes				Total Miles	Daily Mileage
Total Truck Loads for Cut Materials	9,704			19,408	80.87
Total Truck Loads for Fill Materials	10,209			20,418	85.07
Total Truck Loads for Virgin Fill Materials	2,000			20,000	83.33
Total Truck Loads for Waste Materials	2,000			20,000	83.33
Total Truck Loads for Cut/Fill Materials	23,913			79,826	83.15 Average Daily Mileage

Assumptions:

Each haul truck can carry approximately 30 cubic yards of materials.

Each haul truck would travel an average of 2 miles round trip for onsite cut and fill materials.

Each haul truck would travel an average of 10 miles round trip for offsite virgin and waste materials.

Emission Factors

Emission factors are taken from the USEPA MOBILE5 emissions model, as compiled and published in "Air Emissions Inventory Guidance Document for Mobile Sources and Air Force Installations" Air Force Institute for Environmental Safety and Occupational Health Risk Analysis (AFIERA), July 2001.

All vehicle emissions are calculated assuming that the average commute vehicle is five years old. That is calendar year 2008 emissions estimates assume that the average vehicle in each vehicle class is a 2003 model.

Note that PM₁₀ emission factors include both exhaust and "fugitive" emissions (paved road, brake & tire dust, etc.).

Emission Factors in g/mi from MOBILE5 Tables for 2003 Model Year Vehicles in CY2008.

HDDV Low Altitude g/mi - 2008				
HDDV	NO _x	VOC	CO	SO ₂
	6.5	2.0	10.9	0.512
				PM ₁₀
				7.73

Reference: Tables 4-2 through 4-53, (AF IERA, July 2001)

Notes: HDDV emission factors shown above were taken from AF IERA HDDV (>8,500 lbs) emission factors

Haul Truck Emissions

Route A-1 and A-2

F-16

Haul Trucks

HDDV Emissions by Vehicle Class- 2003 (tons)				
HDDV	NO _x	VOC	CO	PM ₁₀
	0.57	0.18	0.96	0.68

CO₂ Emissions

It is assumed that the average vehicle will produce 19.5 pounds of CO₂ per gallon of gas used. (www.eia.doe.gov/oiaf/1605/coefficients)

Total CO ₂ Emissions for Proposed Action	19,458 tpy
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Example: (83.15 ave miles/day) x (240 days working) x (1 gal/10 miles) x (19.5 lb CO₂/gal x ton/2000lb) = 19,458 tons CO₂

Emissions from Diesel Powered Generators for Construction Equipment

The Proposed Action would require six diesel powered generators to power construction equipment. These generators would operate approximately 8 hours per day for 120 working days.

Number of Generators	6
Maximum Hours of Operation	8 hrs/day
Number of Construction Days	240
Total Generator Capacity	75 hp
Hourly Rate	0.5262 MMBtu/hr
Annual Use	6,062 MMBtu/yr

Example: $1\text{hp}=0.002546966\text{ MMBtu/Hr}$
Hourly Rate (MMBtu) = $(75\text{ Hp}/0.363) \times (0.002546699\text{ MMBtu/hr}) = 0.5262\text{ MMBtu/hr}$
Annual Use (MMBtu) = (Number of Generator * Hours Operation/Day * Number of Construction Days) = $(6 \times 8 \times 120 \times 0.5262) = 3,030.9\text{ MMBtu/yr}$

Note: Generators horsepower output capacity is only 0.363 percent efficient (AP-42 Chapter 3.3).
Source: USEPA AP-42 Volume I, Stationary Internal Combustion Sources, Table 3.3-1 (<http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>)

Generator Emission Factors (Diesel)	
NO _x	4.41 lb/MMBtu
VOC	0.36 lb/MMBtu
CO	0.95 lb/MMBtu
SO _x	0.29 lb/MMBtu
PM ₁₀	0.31 lb/MMBtu

Emissions (Diesel)	
NO _x	13.366 tpy
VOC	1.091 tpy
CO	2.879 tpy
SO _x	0.879 tpy
PM ₁₀	0.940 tpy

Example: Total NO_x Emissions = (Annual MMBtu/year*(EF)/2000 = $(3,030.9 \times 4.41)/2000 = 6.68\text{ tpy}$

Source: Emission Factors: USEPA AP-42 Volume I, Stationary Internal Combustion Sources, Table 3.3-1 (<http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>)

Emissions from Diesel Powered Generators for Portable Lights

The Proposed Action would require 10 portable light units to meet USBP operational requirements. These portable lights are powered by a 6-kilowatt self-contained diesel generators. Portable lights would generally operate continuously every night (approximately 12 hours) 365 days per year.

Number of Generators	10
Maximum Hours of Operation	12 hrs/day
Number of Operational Days	365
Total Generator Capacity	6 hp
Hourly Rate	0.0421 MMBtu/hr
Annual Use	606 MMBtu/yr

Example: $1\text{hp}=0.002546966\text{ MMBtu/Hr}$
 $\text{Hourly Rate (MMBtu)} = (6\text{ Hp}/0.363) * (0.002546699\text{ MMBtu/hr}) = 0.0421\text{ MMBtu/hr}$
 $\text{Annual Use (MMBtu)} = (\text{Number of Generator} * \text{Hours Operation/Day} * \text{Number of Construction Days}) = (10 * 12 * 120 * 0.0421) = 606.2\text{ MMBtu/yr}$

Note: Generators horsepower output capacity is only 0.363 percent efficient (AP-42 Chapter 3.3).
Source: USEPA AP-42 Volume I, Stationary Internal Combustion Sources, Table 3.3-1 (<http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>)

Generator Emission Factors (Diesel)	
NO _x	4.41 lb/MMBtu
VOC	0.36 lb/MMBtu
CO	0.95 lb/MMBtu
SO _x	0.29 lb/MMBtu
PM ₁₀	0.31 lb/MMBtu

Emissions (Diesel)	
NO _x	1.337 tpy
VOC	0.109 tpy
CO	0.288 tpy
SO _x	0.088 tpy
PM ₁₀	0.094 tpy

Example: Total NO_x Emissions = (Annual MMBtu/year*(EF)/2000 = (606*4.41)/2000 = 1.337 tpy

Source: Emission Factors: USEPA AP-42 Volume I, Stationary Internal Combustion Sources, Table 3.3-1 (<http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>)

CO₂ Emissions
0.140 MMBTU/gallons of diesel fuel used
3,606 MMBTU/Year*gallons/0.140 = 25,757 gallons
25,757 gallons*21.3 pounds CO₂/gallon = 548,624 pounds

274.312 CO ₂ Emissions (tons)
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San Diego Intrastate Air Quality Control Region

			Area Source Emissions					Point Source Emissions						
Row #	State	County	CO	NOx	PM10	PM2.5	SO2	VOC	CO	NOx	PM10	PM2.5	SO2	VOC
<u>SORT</u>														
1	CA	San Diego Co	600,798	73,048	69,821	17,914	1,748	91,102	4,380	3,295	2,190	1,402	259	4,269
Grand Total			600,798	73,048	69,821	17,914	1,748	91,102	4,380	3,295	2,190	1,402	259	4,269

SOURCE:

<http://www.epa.gov/air/data/geosel.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2001)
Site visited on 17 October 2007.

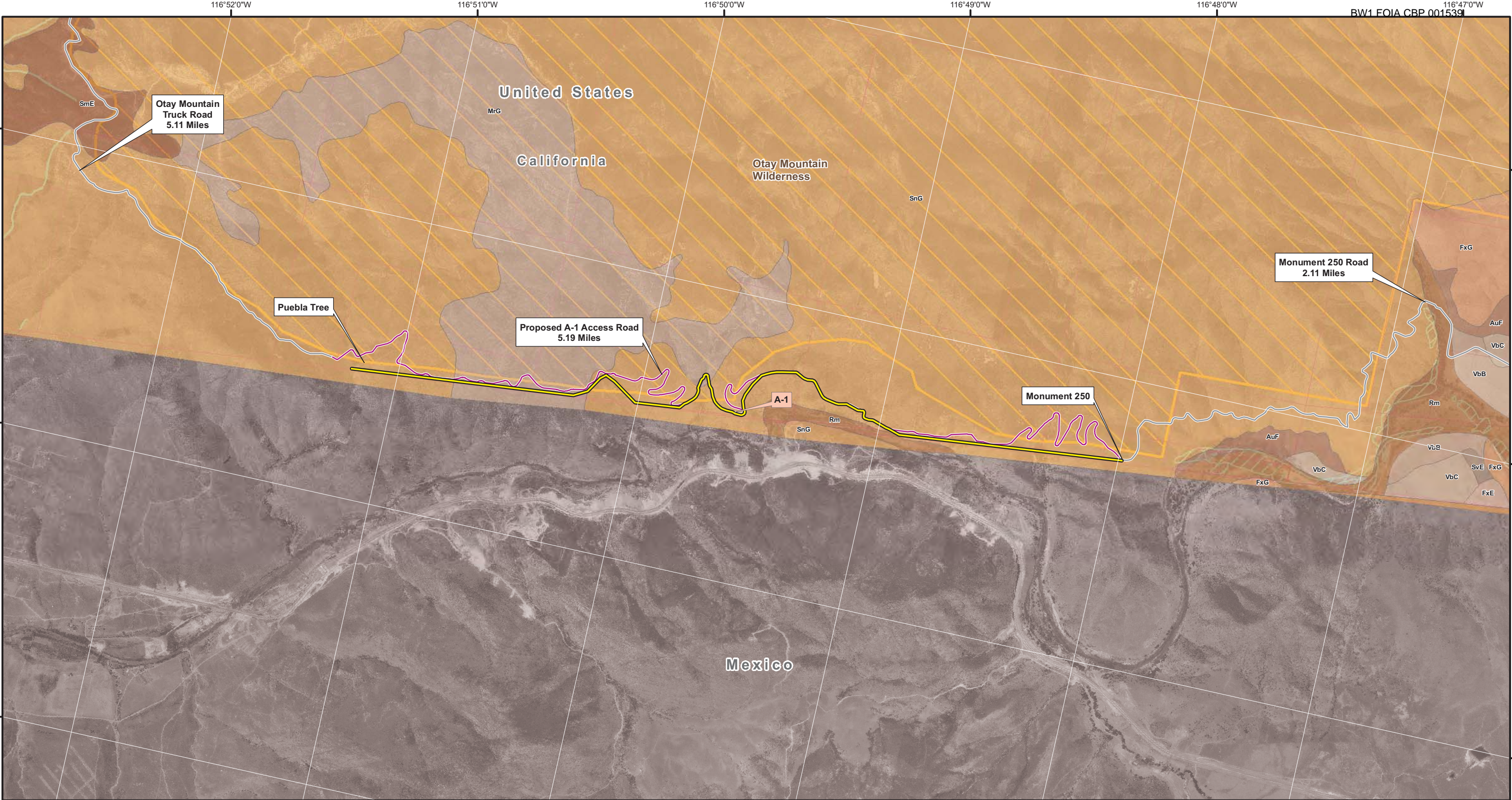
San Diego Intrastate AQCR (40 CFR 81.164): San Diego County, California



APPENDIX G

Detailed Maps of the Proposed Tactical Infrastructure Section Showing Soils

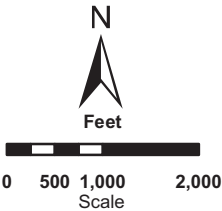




- Proposed Fence Route
- Proposed A-1 Access Road Route
- Existing Access Roads
- Land Parcels
- National Wetlands Inventory
- Otay Mountain Wilderness

Soil Types

- | | |
|---|---|
| AuF, Anderson very gravelly sandy loam, 9 to 45 percent | Rm, Riverwash |
| FxE, Friant rocky fine sandy loam, 9 to 30 percent slop | SmE, San Miguel rocky silt loam, 9 to 30 percent slopes |
| FxG, Friant rocky fine sandy loam, 30 to 70 percent slo | SnG, San Miguel-Exchequer rocky silt loams, 9 to 70 per |
| HrC, Huerhuero loam, 2 to 9 percent slopes | SvE, Stony land |
| MrG, Metamorphic rock land | VbB, Visalia gravelly sandy loam, 2 to 5 percent slopes |
| RkC, Reiff fine sandy loam, 5 to 9 percent slopes | VbC, Visalia gravelly sandy loam, 5 to 9 percent slopes |
| | s1001, Tujunga-Salinas-Elder (s1001) |
| | s1013, San Miguel-Friant-Exchequer (s1013) |



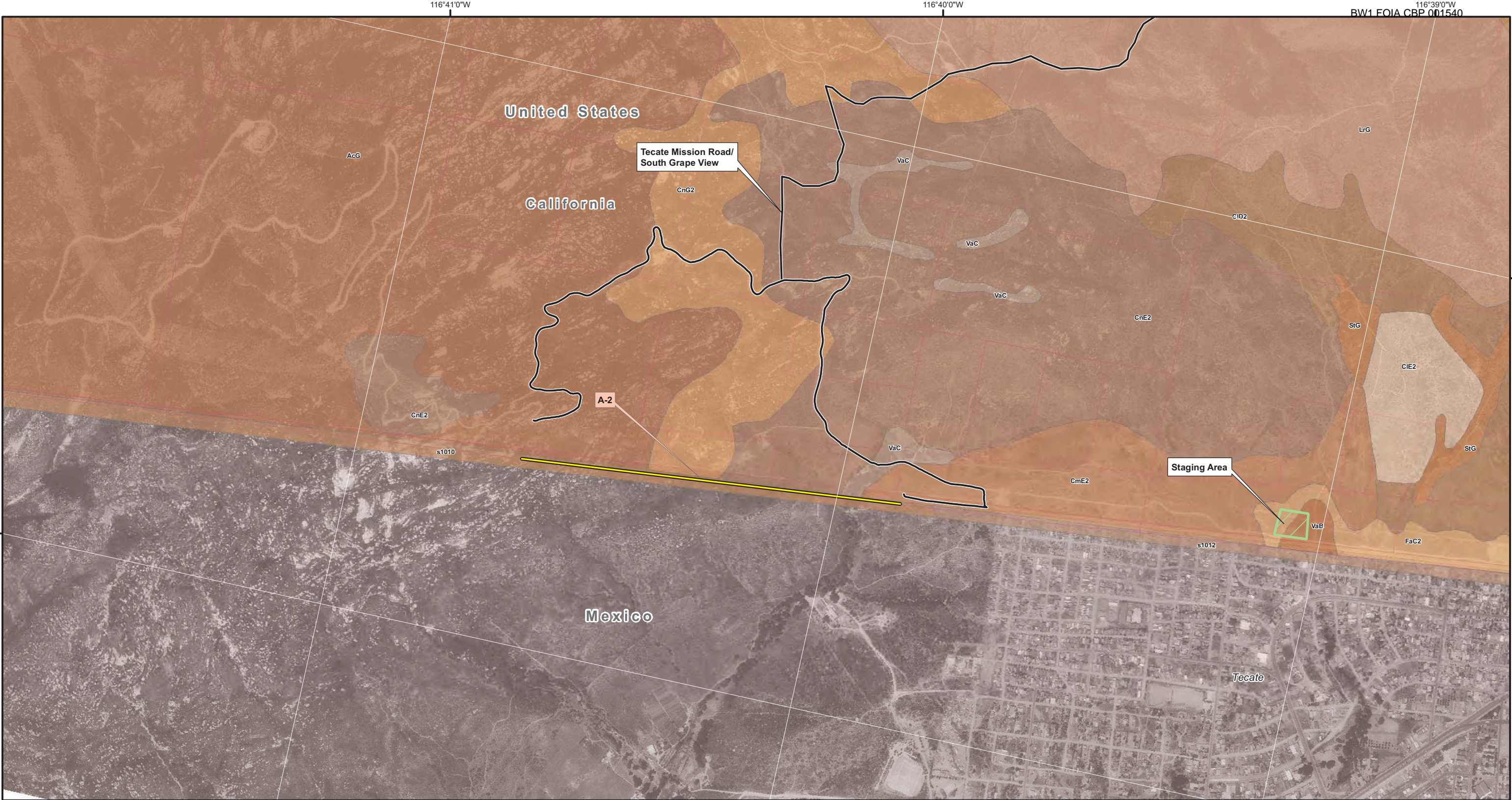
USBP
Proposed Tactical Infrastructure EIS
San Diego Sector, Texas
Detailed Proposed
Fence Section Maps

Projection: Albers
USA Contiguous Albers Equal Area Conic
North American Datum of 1983

December 2007

Scale 1" = 2000'

Map 1 of 2



Proposed Fence Route

Existing Access Roads

Proposed Construction Staging Area

Land Parcels

Soil Types

Label

AcG, Acid igneous rock land

CID2, Cieneba coarse sandy loam, 5 to 15 percent slopes,

CIE2, Cieneba coarse sandy loam, 15 to 30 percent slopes

CmE2, Cieneba rocky coarse sandy loam, 9 to 30 percent s

CnrG, Cieneba very rocky coarse sandy loam, 30 to 75 per

CnE2, Cieneba-Fallbrook rocky sandy loams, 9 to 30 perce

CnG2, Cieneba-Fallbrook rocky sandy loams, 30 to 65 perc

FaC2, Fallbrook sandy loam, 5 to 9 percent slopes, erode

LrE2, Las Posas stony fine sandy loam, 9 to 30 percent s

LrG, Las Posas stony fine sandy loam, 30 to 65 percent

StG, Steep gullied land

VaB, Visalia sandy loam, 2 to 5 percent slopes

VaC, Visalia sandy loam, 5 to 9 percent slopes

WmB, Wyman loam, 2 to 5 percent slopes

WmC, Wyman loam, 5 to 9 percent slopes

s1010, Sesame-Rock outcrop-Cieneba (s1010)

s1012, Rock outcrop-Las Posas (s1012)

N

Feet

0 250 500 1,000

Scale

USBP

Proposed Tactical Infrastructure EIS

San Diego Sector, Texas

Detailed Proposed

Fence Section Maps

Projection: Albers

USA Contiguous Albers Equal Area Conic

North American Datum of 1983

December 2007

Scale 1" = 1000'

Map 2 of 2



APPENDIX H

Draft Biological Survey Report



DRAFT

**BIOLOGICAL SURVEY REPORT
SUPPORTING THE
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
PROPOSED CONSTRUCTION, OPERATION, AND
MAINTENANCE OF TACTICAL INFRASTRUCTURE
U.S. BORDER PATROL SAN DIEGO SECTOR,
CALIFORNIA**

Prepared for:

U.S. Customs and Border Patrol

Prepared by:



DECEMBER 2007

ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
BEPA	Bald Eagle Protection Act
BLM	Bureau of Land Management
CBP	U.S. Customs and Border Protection
CDFG	California Department of Fish and Game
CNDDDB	California Department of Fish and Game's California Natural Diversity Database
CWA	Clean Water Act
DHS	U.S. Department of Homeland Security
e ² M	engineering-environmental Management, Inc.
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FE	Federally Endangered
FT	Federally Threatened
HCP	habitat conservation plan
MBTA	Migratory Bird Treaty Act
MHPA	Multiple Habitat Planning Area
MSCP	Multiple Species Conservation Program
NEPA	National Environmental Policy Act
NWI	National Wetlands Inventory
OMW	Otay Mountain Wilderness
POE	Port of Entry
SE	State Endangered
ST	State Threatened
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOUS	Waters of the United States

**DRAFT BIOLOGICAL SURVEY REPORT
SUPPORTING THE ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CONSTRUCTION, OPERATION, AND MAINTENANCE
OF TACTICAL INFRASTRUCTURE
U.S. BORDER PATROL SAN DIEGO SECTOR, CALIFORNIA**

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1. Introduction

This Biological Survey Report has been prepared to support the development of an Environmental Impact Statement addressing proposed construction, maintenance, and operation of tactical infrastructure along the U.S./Mexico international border in the USBP San Diego Sector, California. The report synthesizes information collected by engineering-environmental Management, Inc (e²M) from a variety of sources to describe the biological resources of the project areas, the potential impacts of the proposed project (described in more detail below) on those biological resources, and recommendations for avoidance or reduction of those impacts. Information was gathered from publicly available literature, data provided by relevant land management agencies, review of aerial photography and U.S. Geological Survey (USGS) topographic maps, data from the California Department of Fish and Game's California Natural Diversity Database (CNDDDB), Bureau of Land Management (BLM), NatureServe; field surveys conducted October 10–12, 15, and 17, 2007; and December 3–5, 2007.

This report was developed to support National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) requirements for analyzing potential impacts on biological resources resulting from proposed construction, maintenance, and operation of tactical infrastructure. It was developed as an independent document but will be included as an appendix in the Environmental Impact Statement developed for this project.

2. Project Description

U.S. Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) proposes to construct, operate, and maintain approximately 4.4 miles of tactical infrastructure including primary pedestrian fence, patrol roads, and access roads along the U.S./Mexico international border in the USBP San Diego Sector, California.

The proposed tactical infrastructure would be constructed in two sections (designated as A-1 and A-2, see **Table 2-1**) along the border within the USBP San Diego Sector, in San Diego County, California. Section A-1 is approximately 3.6 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The proposed section of fence would be adjacent to and on the Otay Mountain Wilderness (OMW), and would follow the U.S./Mexico international border where topography allows, deviating from the border to follow a newly constructed access road where conditions warrant, such as descent to canyon bottoms. The length of access road and patrol road to support the operation and maintenance of the fence would be approximately 5.2 miles. In areas where the patrol road is not adjacent to the fence, trails suitable for light-tracked vehicles would be constructed for the purposes of fence installation and maintenance. These trails would require clearing of brush and boulders and minor grading. Rock outcrops might require leveling for safe travel and fence construction.

Table 2-1. Tactical Infrastructure Sections, San Diego Sector

Fence Section Number	Border Patrol Station	General Location	Approx. Mileage (mi)
A-1	Brown Field/Chula Vista	Pack Trail, South Side of Otay Mountain	3.6
A-2	Brown Field	West of Tecate Port of Entry	0.8
Total			4.4

The OMW is on public lands administered by Bureau of Land Management (BLM). The wilderness boundary is at least 100 feet from the U.S./Mexico international border. The corridor between the OMW and the U.S./Mexico international border is public land administered by the BLM. Approximately one half of the proposed patrol and access road would occur in this corridor between the U.S./Mexico international border and the wilderness boundary. Due to steep topography, approximately one half of the length of patrol and access road and approximately 1,300 feet of the primary pedestrian fence would extend into the OMW.

Section A-2 would be approximately 0.8 miles in length and would connect with existing border fence west of Tecate. This fence section would extend up Tecate Peak to an elevation of approximately 2,200 feet and would pass through a riparian area. This proposed fence section would encroach on a mix of privately owned land parcels and public land administered by the BLM. Construction of this fence section would include an upgrade to an access road west of Tecate.

3. Survey Methods and Limitations

To provide flexibility in placing tactical infrastructure within the proposed project corridor, and to ensure consideration of potential impacts due to construction and use, the biological resources surveys were conducted in an area extending 300 feet on the north side of the proposed individual tactical infrastructure sections and extending at least 0.5 miles past the proposed ends of each section. The areas thus defined are referred to hereafter as the "survey corridor."

Intuitive controlled investigations of the survey corridor were conducted by Rod Dossey of Dossey & Associates (Rare Plant Specialist, Biologist), Michael Klein of Klein-Edwards Professional Services (U.S. Fish and Wildlife Service [USFWS] permitted biologist for Quino checkerspot butterfly), Kevin Clark of Clark Biological Services (USFWS permitted biologist for California gnatcatcher, least Bell's Vireo, and Southwestern willow flycatcher), Brent Eastty of e²M (Ecologist), Karen Stackpole of e²M (Senior Ecologist), and Dustin Janeke of e²M (Biologist).

The October 2007 surveys covered the proposed fence alignment for A-2 (Tecate section), a portion of the most recent alignment at that time on section A-

1 1, and a portion of the BLM access road (from the Puebla Tree to nearly halfway
2 to where the BLM Road meets Otay Truck Trail). Surveyors walked the proposed
3 project corridor as described above for each tactical infrastructure section, and
4 examined in more detail areas containing species compositions or habitat that
5 might be conducive to sensitive species. Plot data (i.e., GPS coordinates,
6 photographs, and plant community composition) were recorded at regular
7 intervals along the corridor and where plant communities presented substantial
8 shifts in species composition. These data will be used to generate vegetation
9 classifications and maps to support delineation of habitat types, analysis of
10 potential sensitive species occurrences, and analysis of potential project impacts
11 on biological resources. These maps will be included in the final report. Although
12 the surveyors are permitted to survey for or monitor for listed species in San
13 Diego, no protocol surveys were conducted. Surveyors did specifically look for
14 evidence indicating the presence of state- and federally listed species (see **Table**
15 **3-1**), and habitats that might support them. Descriptions of the federally listed
16 species are provided in **Appendix A**.

17 **Multiple Species Conservation Program**

18 The San Diego region has a greater number of threatened and endangered
19 species than anywhere else in the continental United States. Over 200 plant and
20 animal species occur in the county that are federally and/or state listed as
21 endangered, threatened, or rare; proposed or candidate for listing; or otherwise
22 considered sensitive. The Multiple Species Conservation Program (MSCP) was
23 developed to provide natural resource guidance for where future development
24 should and should not occur, and to streamline and coordinate procedures for
25 review and for permitting impacts to biological resources (MSCP 1998).

26 The MSCP is a comprehensive habitat conservation planning program in San
27 Diego that provides for a regional process to authorize incidental take of
28 protected species for urban development and for conserving multiple species and
29 their habitat within a 582,243-acre planning area in southwestern San Diego
30 County. The MSCP planning area includes 12 local jurisdictions in southern
31 coastal San Diego County. These jurisdictions implement their respective
32 portions of the MSCP Plan through subarea plans describing specific
33 implementing mechanisms for the MSCP Plan. This includes plans for the City of
34 San Diego and County of San Diego subareas. Both the county and city have
35 finalized their respective subarea plans and have received take authorizations
36 under the MSCP.

37 The MSCP Plan, and each subarea plan prepared pursuant to it, is intended to
38 serve as a multiple species habitat conservation plan (HCP) pursuant to Section
39 10(a)(2)(A) of the ESA. An HCP is required for issuance of a permit for incidental
40 take of listed species pursuant to Section 10(a)(1)(B) of the Act. An HCP may
41 also serve as a Natural Communities Conservation Plan (NCCP) pursuant to the
42 State of California's NCCP Act of 1991, provided findings are made that the plan
43 is consistent with the NCCP Act.

Table 3-1. Federal and State Threatened and Endangered Species in California

Scientific Name	Common Name	Federal Status	State Status
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	E	
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	E	
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	E	
<i>Bufo californicus</i>	Arroyo toad	E	
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	T	
<i>Vireo bellii pusillus</i>	Least Bell's vireo	E	E
<i>Empidonax trailii extimus</i>	Southwestern willow flycatcher	E	E
<i>Ambrosia pumila</i>	San Diego ambrosia	E	
<i>Eryngium aristulatum var. parishii</i>	San Diego button-celery	E	E
<i>Deinandra conjugens</i>	Otay tarplant	T	E
<i>Pogogyne nudiuscula</i>	Otay Mesa mint	E	E
<i>Navarretia fossalis</i>	Spreading navarretia	T	
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	E	
<i>Orcuttia californica</i>	California Orcutt grass	E	E
<i>Baccharis vanessae</i>	Encinitas baccharis	T	E

Source: USFS 2007

Notes: E = endangered; T = Threatened

The MSCP Plan proposes the authorization of incidental take of 85 species, including 20 listed animal and plant species, 8 species currently proposed for federal listing as endangered or threatened, and 1 candidate for federal listing. This proposed list of species for which take is authorized is based upon full implementation of the MSCP Plan (MSCP 1998). **Table 3-2** lists the federally threatened and endangered species that are target MSCP species in the project area.

BLM-Listed Species

The proposed Section A-1 and access road are located partially within BLM lands. **Table 3-2** lists species that are BLM-designated sensitive species and MSCP target species that could occur in the proposed project corridor for Sections A-1 and A-2, or within the access roads.

**Table 3-2. BLM-, CNDDDB-, and MSCP-Listed
Species with the Potential to Occur in the Project Area**

Scientific Name	Common Name	BLM Status	CDFG Status	MSCP Target Species
Invertebrates				
<i>Callophrys thorneii</i>	Thorne's hairstreak butterfly	Sensitive	SC	Yes
Amphibians				
<i>Bufo californicus</i>	Arroyo toad	No	SC	SC
<i>Spea hammondi</i>	Western spadefoot Toad	Sensitive	SC	No
Reptiles				
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	Sensitive	SC	Yes
<i>Phrynosoma coronatum</i>	San Diego (or California) horned lizard	Sensitive	SC (subspecies <i>Blainvillei</i>)	Yes (subspecies <i>Blainvillei</i>)
<i>Thamnophis hammondi</i>	Two-striped garter snake	Sensitive	No	No
Birds				
<i>Agelaius tricolor</i>	Tricolored blackbird	Sensitive	No	Yes
<i>Aquila chrysaetos</i>	Golden eagle	No	SC	Yes
<i>Athene cunicularia</i>	Burrowing owl	Sensitive	SC	Yes
Mammals				
<i>Eumops perotis californicus</i>	Western mastiff bat	Sensitive	SC	Yes
<i>Plecotus townsendii</i>	Townsend's western big-eared bat	Sensitive	SC	Yes

Source: BLM 1994, CDFG 2007, MSCP 1998.

Notes:

CDFG = California Department of Fish and Game

SC = species of concern

4. Environmental Setting

The San Diego area is generally characterized as having a Mediterranean climate. Summers are typically warm and dry, with daytime temperatures rarely exceeding 90 degrees Fahrenheit (°F); winters are mild and wet, with nighttime temperatures usually above freezing. In the mountainous region where the project sites are located, temperatures range from 25 °F to 90 °F. Average annual precipitation ranges from 10 to 25 inches, and dry periods of 7 to 8 months are common. Eighty-five percent of the rainfall in the region occurs from November to March, but wide variations take place in monthly and seasonal totals (NOAA 2007).

The vegetation of Southern California has generally been classified under the Humid Temperate Domain, Mediterranean Division of Bailey (1995). The proposed project area is predominantly classified as the California Coastal Range Open Woodland–Shrub–Coniferous Forest–Meadow Province (Bailey 1995). The Jepson Manual (Hickman et al. 1996) describes vegetation geography using combined features of the natural landscape, including natural vegetation types and plant communities, and geologic, topographic, and climatic variation. This geographic system places the proposed project corridor in the California Floristic Province, Southwestern California Region, and Peninsular Ranges Subregion.

NatureServe (2007) has defined ecological systems to represent recurring groups of biological communities that are found in similar physical environments and are influenced by similar dynamic ecological processes such as fire or flooding. Ecological systems represent classification units that are readily identifiable by conservation and resource managers in the field. The vegetation description for the proposed project corridor was prepared in the framework of ecological systems that include:

1. Southern California Dry-Mesic Chaparral (CES206.930)
2. Southern California Oak Woodland and Savanna (CES206.938).

Chaparral within this ecological system (CES206.930) occurs up to 4,550 feet in elevation and on well-drained soils of slopes, toeslopes, and in concavities (NatureServe 2007). It is characterized by several species of *Ceanothus* (*C. megacarpus*, *C. crassifolius*, *C. leucodermis*, and *C. greggii*), *Adenostema fasciculatum*, *A. sparsifolium*, *Arctostaphylos glauca*, *Cercocarpus betuloides*, *Rhus ovata*, and *Xylococcus bicolor*. Woodlands within this ecological system (CES206.938) occur in major side canyons to the Tijuana River, including Copper, Buttewig, and Mine. They are characterized by species of *Quercus* (*Q. agrifolia*, *Q. wislizenii*, and *Q. engelmannii*), *Platanus racemosa*, *Malosma laurina*, *Toxicodendron diversilobum*) and *Baccharis emoryi*.

A summary of the ecological systems that can be found in the Southern California area, along with typical species compositions and features are provided in **Table 4-1**.

1

Table 4-1. Ecological Systems of Southern California

Ecological System	Characteristic Species/Features
Central and Southern California Mixed Evergreen Woodland (CES206.920)	<i>Pseudotsuga macrocarpa</i> , <i>Quercus chrysolepis</i> , <i>Q. agrifolia</i> , and <i>Q. kelloggii</i> , <i>Umbellularia californica</i> , <i>Acer macrophyllum</i> , <i>Arbutus menziesii</i> /Metasediments and Granitics
Baja Semi-Desert Coastal Succulent Scrub (CES206.934)	<i>Lycium californicum</i> , <i>Rhus integrifolia</i> , <i>Opuntia californica</i> var. <i>parkeri</i> (= <i>O. parryi</i>), <i>O. prolifera</i> , <i>O. littoralis</i> , <i>Yucca schidigera</i> , <i>Ferocactus viridescens</i> , <i>Agave shawii</i> , <i>Euphorbia misera</i> , <i>Bergerocactus emoryi</i> , <i>Simmondsia chinensis</i> /Maritime Coastal Bluffs
California Mesic Chaparral (CES206.926)	<i>Quercus berberidifolia</i> , <i>Q. wislizeni</i> var. <i>frutescens</i> , <i>Cercocarpus montanus</i> var. <i>glaber</i> (= <i>C. betuloides</i>), <i>Fraxinus dipetala</i> , <i>Garrya flavescens</i> , and <i>G. elliptica</i> , <i>Heteromeles arbutifolia</i> , <i>Lonicera</i> spp., <i>Prunus ilicifolia</i> , <i>Rhamnus crocea</i> , <i>R. ilicifolia</i> , <i>Toxicodendron diversilobum</i> , <i>Ribes</i> spp., <i>Sambucus</i> spp./North-facing Slopes, Toeslopes, Concavities, Well-drained Soils
Southern California Coastal Scrub (CES206.933)	<i>Artemisia californica</i> , <i>Salvia</i> (<i>mellifera</i> , <i>apiana</i> , <i>leucophylla</i>), <i>Encelia californica</i> , <i>Eriogonum fasciculatum</i> , <i>E. cinereum</i> , <i>Opuntia littoralis</i> , <i>Diplacus aurantiacus</i> (= <i>Mimulus aurantiacus</i>), <i>Lotus scoparius</i> , <i>Baccharis pilularis</i> /Coarse Gravel to Clay Soils
Southern California Dry-Mesic Chaparral (CES206.930)	<i>Ceanothus megacarpus</i> , <i>C. crassifolius</i> , <i>C. leucodermis</i> , <i>C. greggii</i> , <i>Adenostoma fasciculatum</i> , <i>A. sparsifolium</i> , <i>Arctostaphylos glauca</i> , <i>Cercocarpus montanus</i> (var. <i>glaber</i> , var. <i>minutiflorus</i>), <i>Rhus ovata</i> , <i>Xylococcus bicolor</i> /North-facing Slopes, Toeslopes, Concavities, Well-drained Soils
California Coastal Live Oak Woodland and Savanna (CES206.937)	<i>Quercus agrifolia</i> , <i>Rubus ursinus</i> , <i>Symphoricarpos mollis</i> , <i>Heteromeles arbutifolia</i> , <i>Toxicodendron diversiloba</i> /Dense to Sparse Canopy, Latter on South-facing Slopes
Southern California Oak Woodland and Savanna (CES206.938)	<i>Quercus agrifolia</i> , <i>Q. wislizeni</i> , <i>Q. engelmannii</i> , <i>Juglans californica</i> /Coastal Plains and Intermountain Valleys
California Central Valley and Southern Coastal Grassland (CES206.942)	<i>Nassella pulchra</i> , <i>Aristida</i> spp., <i>Achillea millefolium</i> var. <i>borealis</i> , <i>Achyrachaena mollis</i> , <i>Agoseris heterophylla</i> , <i>Bloomeria crocea</i> , <i>Triteleia ixioides</i> (= <i>Brodiaea lutea</i>), <i>Chorogalum pomeridianum</i> , <i>Clarkia purpurea</i> , <i>Dodectheon jeffreyi</i> , <i>Elymus glaucus</i> , <i>Leymus triticoides</i> , <i>Festuca californica</i> , <i>Melica californica</i> , <i>Poa secunda</i> /Fine-textured Soils, Moist in Winter

Ecological System	Characteristic Species/Features
Mediterranean California Alkali Marsh (CES206.947)	<i>Distichlis spicata</i> , <i>Juncus balticus</i> , <i>Anemopsis californica</i> , <i>Schoenoplectus americanus</i> , <i>Atriplex</i> spp., <i>Triglochin maritime</i> , <i>Cirsium</i> spp./Lake Beds, Floodplains, High Groundwater
Mediterranean California Eelgrass Bed (CES206.999)	<i>Zostera marina</i> , <i>Phyllospadix scouleri</i> , <i>Fucus distichus</i> , <i>Postelsia plamaeformis</i> /Intertidal Zones
North American Arid West Emergent Marsh (CES206.729)	<i>Scirpus</i> spp., <i>Schoenoplectus</i> spp., <i>Typha</i> spp., <i>Juncus</i> spp., <i>Potamogeton</i> spp., <i>Polygonum</i> spp., <i>Nuphar</i> spp., <i>Phalaris</i> spp./Saturated or Inundated Soils
South Coastal California Vernal Pool (CES206.950)	<i>Trichostema austromontanum</i> , <i>Pogogyne abramsii</i> , <i>Eryngium aristulatum</i> , <i>Orcuttia californica</i> , <i>Pogogyne nudiuscula</i> , <i>Navarretia fossalis</i> , <i>Hemizonia parryi</i> ssp. <i>australis</i> , <i>Lasthenia glabrata</i> ssp. <i>coulteri</i> /Small Depressions with Durapan or Cemented Hardpans
Mediterranean California Coastal Bluff (CES206.906)	<i>Baccharis pilularis</i> , <i>Dudleya</i> spp., <i>Carpobrotus</i> (<i>chilensis</i> , <i>edulis</i>), <i>Hazardia squarrosa</i> , <i>Eriogonum parvifolium</i> , <i>Erigeron glaucus</i> , <i>Eriophyllum stoechadifolium</i> , <i>Plantago maritima</i> /Sea Bluffs and Rocky Headlands
Mediterranean California Southern Coastal Dune (CES206.908)	<i>Abronia</i> (<i>maritima</i> , <i>umbellatum</i>), <i>Atriplex leucophylla</i> , <i>Isocoma menziesii</i> , <i>Distichlis spicata</i> , <i>Croton californicus</i> , <i>Lupinus chamissonis</i> , <i>Carpobrotus chilensis</i> /Beaches, Foredunes, Sandspits
Southern California Coast Ranges Cliff and Canyon (CES206.904)	<i>Ceanothus megacarpus</i> , <i>C. leucodermis</i> , <i>Cercocarpus montanus</i> var. <i>minutiflorus</i> , <i>Arctostaphylos glauca</i> , <i>Xylococcus bicolor</i> /Cliff Faces, Rockfall, Canyonsides

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5. Biological Resources

5.1 Vegetation Classification

The U.S. Forest Service (USFS) recognizes two provinces in the San Diego area: California Coastal Chaparral Forest Shrub Province (261) and California Coastal Range Open Woodland–Shrub–Coniferous Forest–Meadow Province (M262) (Bailey 1995). The proposed Sections A-1 and A-2 lie within both of these provinces and consist predominantly of chaparral and coastal sage scrub found on south-facing slopes and drier areas, and riparian canyon bottoms consisting of broadleaf species. Chaparral communities are adapted to periodic occurrences of fire, whereas coastal sage scrub communities exist in drier, arid areas, and the broadleaf species found in riparian areas are adapted to drastic ranges of stream flow in the canyon bottoms (USFS 2007).

NatureServe (2007) has defined ecological systems to represent recurring groups of biological communities that are found in similar physical environments and are influenced by similar dynamic ecological processes, such as fire or flooding. Ecological systems represent classification units that are readily identifiable by conservation and resource managers in the field. The ensuing vegetation description for the project area was prepared in the framework of ecological systems that include California Coastal Closed-Cone Conifer Forest and Woodland, California Maritime Chaparral, North American Warm Desert Riparian Woodland and Shrubland, California Coastal Live Oak Woodland and Savanna, Southern California Coastal Scrub, and Southern California Dry-Mesic Chaparral.

Classification of existing vegetation within this corridor was achieved by accessing nearly the entire corridor as proposed, sampling observation points, and relating them to the NatureServe Explorer classification database (2007). At the coarsest level, the six above-named ecological systems were determined and local vegetation types placed into the national system. A finer level of classification equaling or approximating the vegetation alliance level of the National Vegetation Classification System (NatureServe 2007) was used to prepare the plant community discussions under each ecological system. Unclassifiable vegetation stands and patches sampled within the proposed corridor typically consisted of nonnative species in weedy areas, such as *Bromus* sp., *Avena* sp., and *Erodium botrys*.

Habitats observed, sampled, and photographed within the project corridor range from chaparral to riparian, coastal sage scrub, oak woodland, and disturbed areas. A brief description of each plant community observed within the proposed sections is provided in **Table 5-1** through **Table 5-19**; They are distinguished using the NatureServe Vegetation Alliance level of classification or an approximation. To the extent possible, each community is illustrated and supported by representative ground photographs (**Figures 5-1** through **5-16**) and foliar cover information for dominant species. Some vegetation patches and stands are introduced nonnative species and do not readily fit into a recognized

vegetation alliance or ecological system designed for native vegetation; they are discussed at the end of this section.

5.1.1 Ecological Systems

Southern California Dry-Mesic Chaparral Ecological System (CES206.930)

This ecological system includes chaparral from sea level up to 1,500 meters (4,550 feet) elevation throughout Central and Southern California and inland portions of Baja Norte, Mexico. It is found in dry-mesic to mesic site conditions analogous to mesic chaparral. Santa Ana winds drive late-summer, stand-replacing fires in these systems. Characteristic species include *Ceanothus megacarpus*, *Ceanothus crassifolius*, *Ceanothus leucodermis*, *Ceanothus greggii*, *Adenostoma fasciculatum*, *Adenostoma sparsifolium*, *Arctostaphylos glauca*, *Cercocarpus montanus* var. *glaber* (= *Cercocarpus betuloides*), *Cercocarpus montanus* var. *minutiflorus* (= *Cercocarpus minutiflorus*), *Rhus ovata*, and *Xylococcus bicolor*.

Southern California Coastal Scrub Ecological System (CES206.933)

This ecological system includes mixed coastal shrublands from Monterey, California, south into Baja Norte, Mexico. It is dominated by drought-deciduous shrubs but at times can have characteristic (constant but not dominant) resprouting, deep-rooted sclerophyllous shrubs. It occurs below 1,000 meters (3,300 feet) elevation and may extend inland from the maritime zone in hotter, drier conditions than northern (less fog-drenched) shrublands (e.g., areas with 10–60 centimeters of annual precipitation). Soils vary from coarse gravels to clays but typically only support plant-available moisture with winter and spring rain. Most predominant shrubs include *Artemisia californica*, *Salvia mellifera*, *Salvia apiana*, *Salvia leucophylla*, *Encelia californica*, *Eriogonum fasciculatum*, *Eriogonum cinereum*, *Opuntia littoralis*, *Diplacus aurantiacus* (= *Mimulus aurantiacus*), *Lotus scoparius* (early seral after fire), and *Baccharis pilularis* (in moister, disturbed sites). Characteristic (constant but not dominant) resprouting, deep-rooted sclerophyllous shrubs include *Malosma laurina*, *Rhus integrifolia*, and *Rhamnus crocea*. Fire frequency has been historically low, but in recent years, the fire frequency has increased due to arson or cigarette ignition, resulting in type conversion to non-native and ruderal annual grasslands. *Malosma laurina* and *Rhus integrifolia* are also increasing in abundance, because they can continually resprout after repeated fires. In places, *Opuntia littoralis* may proliferate and cover entire slopes in dry rocky areas with repeated fires that have killed the scrub taxa, whereas *Opuntia littoralis* can resprout and spread to cover large patches.

California Maritime Chaparral Ecological System (CES206.929)

This ecological system includes chaparral in patches restricted by edaphic conditions (sands, sandstones, other marine sediments, and stabilized sand dunes) within the fog belt throughout the central and northern California coast.

1 This system is characterized by a combination of locally endemic species of
 2 *Arctostaphylos* and *Ceanothus*, and they are primarily species that reproduce by
 3 seed rather than resprouting. Shrubs vary in height up to 3 meters and in variable
 4 density. More open patches support herbaceous vegetation, while occurrences of
 5 high shrub density have no understory. Characteristic species include
 6 *Arctostaphylos tomentosa*, *Arctostaphylos nummularia* (= *Arctostaphylos*
 7 *sensitiva*), *Arctostaphylos tomentosa* ssp. *crustacea* (= *Arctostaphylos*
 8 *crustacea*), *Arctostaphylos hookeri*, *Arctostaphylos pajaroensis*, *Arctostaphylos*
 9 *montaraensis* (and others), *Ceanothus masonii*, *Ceanothus griseus*, and
 10 *Ceanothus verrucosus*. Southernmost stands (San Diego County) can include
 11 *Cneoridium* spp. and *Comarostaphylis diversifolia*. Other common widespread
 12 woody taxa can include *Adenostoma fasciculatum*, *Salvia mellifera*, *Frangula*
 13 *californica* (= *Rhamnus californica*), *Rhamnus crocea*, and *Quercus agrifolia*.
 14 Controlled burns have resulted in poor survivorship of the *Arctostaphylos* spp.,
 15 and current theories are that they need long fire-free intervals to develop a viable
 16 seedbank that can reproduce following fire (Keeley and Davis 2005). This
 17 system often co-occurs with California Coastal Closed-Cone Conifer Forest and
 18 Woodland (CES206.922).

19 **California Coastal Closed-Cone Conifer Forest Ecological System (CES206.922)**

20 For purposes of this report, this system is used to identify Tecate cypress
 21 (*Cupressus forbesii*)-dominated woodland communities. In general, small
 22 occurrences of this system may be found in scattered locations along California's
 23 entire coastline and onto the Channel Islands. They are found on marine
 24 sedimentary, non-metamorphosed features, often with podsols on sterile
 25 sandstone. These forests and woodlands are limited to coastal areas with
 26 moderate maritime climate and likely receive more annual precipitation than
 27 nearby coastal chaparral. Highly localized endemic tree species include
 28 *Cupressus macrocarpa*, *Cupressus goveniana*, and *Cupressus abramsiana* in
 29 scattered groves along coastal Mendocino, San Mateo, Santa Cruz, and
 30 Monterey counties. *Pinus contorta* var. *contorta*, *Pinus contorta* var. *bolanderi*,
 31 *Pinus muricata*, *Pinus torreyana*, and *Pinus radiata* are dominant or codominant
 32 in these and other occurrences. These occurrences can also include pygmy
 33 woodland expressions where nearly lateritic subsoil underlies acidic sands
 34 (ancient marine terraces). Stunted and twisted *Pinus contorta* var. *contorta*
 35 stands along the Oregon coast (often called pygmy forests) are also part of this
 36 system. Other associated plant species include *Arctostaphylos nummularia*,
 37 *Ledum groenlandicum*, *Vaccinium ovatum*, *Gaultheria shallon*, *Rhododendron*
 38 *macrophyllum*, and *Morella californica* (= *Myrica californica*). The lichen and
 39 moss component of this system is very diverse, includes *Cladonia* spp, and can
 40 be abundant in these communities.

5.1.2 Associations

North American Warm Desert Riparian Woodland and Shrubland Ecological System (CES302.753)

***Baccharis salicifolia* Riparian Shrubland (CEGL003549).** This riparian shrubland is known from central and southern interior coastal mountains of California, the Anza-Borrego Desert, and south into Baja California, Mexico. It is often found along washes, springs, and riparian corridors. It is usually a small stringer community. It can occur on steep slopes associated with springs. Soils are coarse to fine sandy loams, mostly derived from alluvium. Elevation ranges from 216 to over 914 meters (708–3,000+ feet). The shrub layer is dominated by *Baccharis salicifolia*. Non-native *Tamarix* is often found but usually in relatively low cover. *Baccharis pilularis* may also be present in low cover. The herbaceous layer is dominated by a variety of non-native and native species such as *Ambrosia psilostachya*, *Bromus hordeaceus*, *Hirschfeldia incana*, *Lepidium latifolium*, *Artemisia douglasiana*, and *Urtica dioica*. *Salix gooddingii* or *Platanus racemosa* may be emergent in some stands. *Baccharis salicifolia* is usually dominant. Non-native *Tamarix* is often found but usually in relatively low cover. *Baccharis pilularis* may also be present in low cover. *Salix gooddingii* may be emergent in some stands. The herbaceous layer is dominated by a variety of non-native and native species such as *Ambrosia psilostachya*, *Bromus hordeaceus*, *Hirschfeldia incana*, *Lepidium latifolium*, *Artemisia douglasiana*, and *Urtica dioica*. Other herbaceous species include forbs *Pseudognaphalium canescens* ssp. *beneolens* (= *Gnaphalium canescens* ssp. *beneolens*), *Lotus unifoliolatus* var. *unifoliolatus* (= *Lotus purshianus* var. *purshianus*), *Melilotus indicus*, and *Rumex salicifolius*, and graminoids *Aira caryophyllea*, *Bromus diandrus*, and *Vulpia myuros*.

California Coastal Live Oak Woodland and Savanna Ecological System (CES206.937)

***Quercus agrifolia*/Toxicodendron diversilobum Woodland (CEGL002866).** This association is known from parts of central and south coastal California. This woodland association occurs on gentle to steep slopes with variable aspects at low elevations between 40 and 577 meters (130–1,900 feet). It is dominated by *Quercus agrifolia* in the tree layer. *Toxicodendron diversilobum* is characteristic in the understory shrub layer, and a variety of grasses and forbs are in the herbaceous layer. Frequently, *Diplacus aurantiacus* (= *Mimulus aurantiacus*) and *Heteromeles arbutifolia* are also included. *Malosma laurina*, *Artemisia californica*, *Salvia leucophylla*, *Sambucus mexicana*, and *Rhamnus ilicifolia* are occasionally included in the shrub layer. The herbaceous layer is diverse and includes *Leymus condensatus*, *Marah macrocarpus*, *Bromus diandrus*, *Piptatherum miliaceum*, and *Melica imperfecta*.

Southern California Dry-Mesic Chaparral Ecological System (CES206.933)

***Adenostoma fasciculatum* Shrubland (CEGL002924).** This shrubland occurs on extremely xeric sites at 38 to 1,097 meters (124–3,600 feet) elevation on mid

to upper slopes and ridgetops of mostly southeast- to southwest-facing slopes, but can also occur on north-facing slopes. The surface is undulating to linear, on moderately steep to steep slopes. Soils tend to be moderately well-developed and somewhat stony with variable textures, including sand, clay, silt, and various loams. The parent material ranges from igneous, granitic, and metamorphic, to gneiss and may include gabbro and serpentine substrates in the Sierra Nevada foothills. Vegetation is dominated by *Adenostoma fasciculatum* in the shrub layer, with a diverse but low cover herbaceous layer. *Arctostaphylos glauca*, *Arctostaphylos pungens*, *Eriogonum fasciculatum*, *Heteromeles arbutifolia*, *Salvia columbariae*, *Salvia apiana*, and *Yucca whipplei* may occur at low cover. The herb layer is open and may include *Bromus madritensis*, *Aira caryophyllaea*, *Avena barbata*, *Erodium cicutarium*, and *Lotus* spp. There are rarely emergent trees, at very low cover, which may include *Pinus sabiniana*, *Quercus agrifolia*, *Umbellularia californica*, or *Platanus racemosa*. The chamise alliance is the most widespread chaparral vegetation in California and ranges from Shasta County in the north to northwestern Baja California, Mexico. It is differentiated from other *Adenostoma fasciculatum* shrublands by a near total dominance of chamise. Other shrubs that codominate in other associations may be present, but these are generally much less than 10 percent cover, usually less than 1 percent. *Adenostoma fasciculatum* is the sole dominant species in the shrub overstory.

5.1.3 Alliances

Bromus Herbaceous Alliance (A.1813)

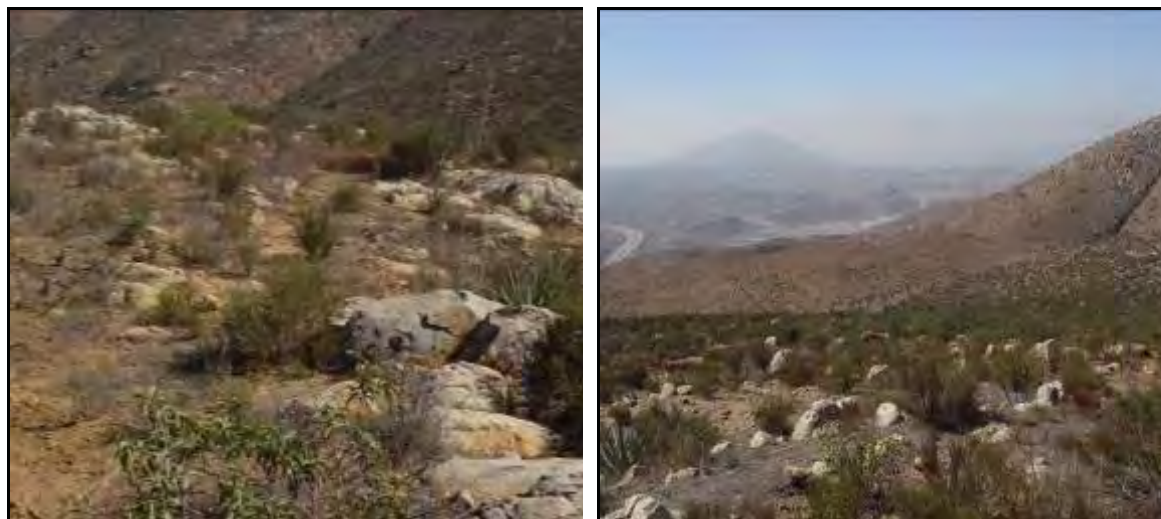
This is a highly variable, catch-all alliance. Fall temperatures and precipitation are the major factors determining grassland structure. *Bromus* spp. are very common to dominant grasses. The composition of this widespread western annual grassland alliance varies widely. Many alien and native annual species may be present, including *Bromus diandrus*, *Bromus hordeaceus*, *Bromus madritensis*, *Cynosurus echinatus*, *Aira caryophyllaea*, and species of *Erodium*, *Lasthenia*, *Lupinus*, *Brassica*, *Avena*, *Castilleja*, *Lolium*, and *Centaurea*. This short, temperate, annual grassland forms a herbaceous canopy less than 1 meter in height. Emergent shrubs and trees may be present. This broadly defined annual grassland alliance is composed of many native and exotic annual grasses. Composition varies among stands and is largely determined by fall temperatures and precipitation, light intensity, litter thickness, and microtopography. Disturbance history is often directly related to the percentage of exotic alien species, with heavy disturbance correlating with heavy exotic invasion. Annual grasses are supremely adapted to the Mediterranean climate of California; many species evolved under similar conditions in southern Europe and northern Africa. Plants germinate during winter rains, and complete their life cycles by the beginning of the summer drought. Seeds often remain viable for many years.

1

Table 5-1. Vegetation Classifications Regions 1, 3, and 5

Holland Habitat	Southern Mixed Chaparral	37120
A Manual of California Vegetation	Chamise-Mission Manzanita-Woollyleaf Ceanothus Series	N/A
NatureServe Habitat	Southern California Dry Mesic Chaparral	CES206.930
Survey Date	10/11/2007	
Disturbances	This area has been burned, possibly in 2003. This area is degraded by grazing. Regions 3 and 5 are more impacted by grazing than Region 1.	
Quality Assessment	This habitat is of moderate quality when compared to similar undisturbed habitats. It is not a pristine habitat, and there are more exotic plants than would be expected in a pristine habitat of this type.	
Dominant Species	<i>Helianthemum scoparium</i> <i>Lotus scoparius</i> <i>Xylococcus bicolor</i> <i>Ceanothus tomentosus</i> <i>Adenostema fasciculatum</i>	

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3 **Figures 5-1 and 5-2. Photographs Representative of Regions 1, 3, and 5**

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1 **Table 5-2. Vegetation Classifications Regions 2, 4, 6, and 15**

Holland Habitat	Diegan Coastal Sage Scrub	32500
A Manual of California Vegetation	California Encelia Series*	N/A
NatureServe Habitat	Southern California Coastal Scrub	CES206.933
Date	10/11/2007 and 10/15/07	
Disturbances	This area has been burned, possibly in 2003. This area is heavily degraded by grazing. This habitat may have been affected by the drought, though those effects are impossible to distinguish from the combined effects of the above.	
Quality Assessment	This habitat is of very low quality when compared to similar undisturbed habitats. It is not a pristine habitat, and the habitat is very sparse and has a much larger number of exotic species than would be expected in a pristine habitat condition. The disturbances are so severe that even identifying dominant species is challenging.	
Notes	*San Diego Sunflower replaces Encelia in a similar ecological niche this far south in California. If Encelia is replaced with <i>Viguiera laciniata</i> then the Manual's description fits. The second photo shows this habitat in the foreground and southern mixed chaparral on the slope in the distance.	

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**Figures 5-3 and 5-4. Photographs Representative of
Regions 2, 4, 6, and 15**

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Table 5-3. Vegetation Classifications Region 7

Holland Habitat	Diegan Coastal Sage Scrub	32500
A Manual of California Vegetation	California sagebrush-California buckwheat series	N/A
NatureServe Habitat	Southern California Coastal Scrub	CES206.933
Date	10/11/2007	
Disturbances	This area has been burned possibly in 2003. This area is regularly grazed. Several alien trails go through this area.	
Quality Assessment	This area varies from high quality to moderately low quality depending on the amount of disturbance, which is unevenly distributed. Overall the area is moderate to good quality habitat.	
Dominant Species	<i>Malosma laurina</i> <i>Artemisia californica</i> <i>Eriodictyon trichocalyx</i>	
Notes	A drainage dominated by <i>Iva hayesiana</i> runs through this area and supports the more mesic species. No photo available.	

Table 5-4. Vegetation Classifications Region 8

Holland Habitat	Mulefat Scrub	63310
A Manual of California Vegetation	Mulefat series	N/A
NatureServe Habitat	Baccharis salicifolia riparian shrubland	CEGL003549
Date	10/15/2007	
Disturbances	This area has been burned, possibly in 2003. This area is grazed, but not as heavily as other portions of the surveys area.	
Quality Assessment	This area is very small and of moderate to high quality. The habitat is certainly impacted by grazing and alien activities. The area still has a high diversity and low number of exotic species for the level of impacts.	
Notes	No Photo	

Table 5-5. Vegetation Classifications Region 9

Holland Habitat	Diegan Coastal Sage Scrub	32500
A Manual of California Vegetation	California buckwheat-white sage series*	N/A
NatureServe Habitat	Southern California Coastal Scrub	CES206.933
Date	10/12/2007	
Disturbances	This area has been degraded by numerous dirt roads and trails.	
Quality Assessment	This habitat is of moderate quality due to human impacts from both sides of the border. While there are patches of high quality habitat, there are also patches of extreme disturbance where no natural habitat occurs.	
Dominant Species	<i>Malosma laurina</i> <i>Eriogonum fasciculatum</i>	
Notes	*The description in A Manual of California Vegetation isn't truly reflective of field conditions, but it is the closest representation.	

**Figure 5-5. Photograph Representative of Region 9**

Table 5-6. Vegetation Classifications Region 10

Holland Habitat	Southern Coast Live Oak Riparian Forest	61310
A Manual of California Vegetation	Coast Live Oak Series	N/A
NatureServe Habitat	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> Woodland	CEGL002866
Date	10/12/2007	
Disturbances	There is an occupied house, with a fenced yard and road under the oaks in this woodland. There are fewer trails through the oak woodland than in the adjacent habitats.	
Dominant Species	<i>Quecus agrifolia</i>	
Quality Assessment	This habitat is of poor quality. While natives occur here, much of the understory is dominated by exotic species. A house, associated landscaping, and exotics dominate the understory. The oaks themselves appear to be doing very well.	

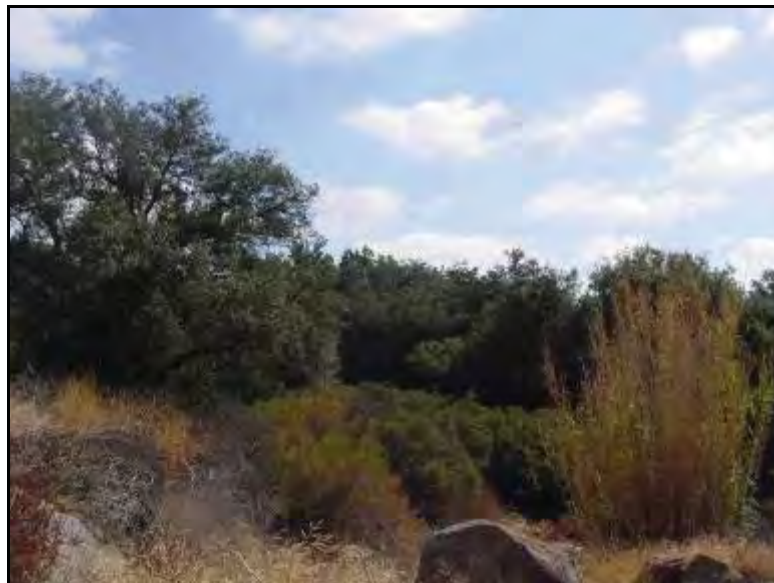


Figure 5-6. Photograph Representative of Region 10

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Table 5-7. Vegetation Classifications Region 11

Holland Habitat	Diegan Coastal Sage Scrub	32500
A Manual of California Vegetation	California buckwheat-white sage series*	N/A
NatureServe Habitat	Southern California Coastal Scrub	CES206.933
Date	10/12/2007	
Disturbances	This area has been degraded by the large number of dirt roads and trails through it, though not nearly to the extent of Region 9. There is the foundation of an old homestead, many alien trails, and a dirt road in the eastern portion of Region 11.	
Dominant Species	<i>Artemisia californica</i> <i>Malosma laurina</i> <i>Bromus madritensis</i>	
Quality Assessment	This habitat is of high quality. There is a drainage that runs through much of it. The diversity of plant species is very high in this area. While there are many more trails than would be expected in this type of habitat, the vegetation appears to still be thriving despite the trail activity.	
Notes	*The description in A Manual of California Vegetation isn't truly reflective of field conditions, but it is the closest representation. It is very difficult to ascertain dominance in this area due to the diversity of the habitat. In the drainage, which makes up a large part of the survey area, scrub oaks are a dominant, but in fact this is a montage of microhabitats that are too small to be mapped individually and vary in dominance species. Overall though the area is a coastal sage scrub type habitat.	

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Figure 5-7. Photograph Representative of Region 11

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Table 5-8. Vegetation Classifications Region 12

Holland Habitat	Whitethorn Chaparral	37532
A Manual of California Vegetation	Chaparral whitethorn series	N/A
NatureServe Habitat	California maritime chaparral	CES206.929
Dominant Species	<i>Ceanothus leucodermis</i> <i>Avena</i> sp. <i>Romneya coulteri</i> var. Unk.	
Date	10/12/2007	
Disturbances	This area shows evidence of having been burned, possibly in 2005. Alien trails run through this area.	
Quality Assessment:	This habitat is of moderate quality. The area is along a ridgeline dominated by large granite boulders. The area is being invaded by exotic grasses due to the disturbance, but otherwise is of good quality.	



Figure 5-8. Photograph Representative of Region 12

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Table 5-9. Vegetation Classifications Region 13

Holland Habitat	Non-Native Grassland	42200
A Manual of California Vegetation	California annual grassland Series	N/A
NatureServe Habitat	Bromus herbaceous alliance	A.1813
Dominant Species	<i>Bromus madritensis</i> <i>Bromus mollis</i> <i>Avena</i> sp.	
Date	10/12/2007	
Disturbances	This area shows evidence of having been burned, possibly in 2005. Alien trails run through this area.	
Quality Assessment	The area appears to be type-transitioning due to fire, from whitethorn chaparral to non-native grassland.	

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Figure 5-9. Photograph Representative of Region 13

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Table 5-10. Vegetation Classifications Region 14

Holland Habitat	Southern Coast Live Oak Riparian forest	61310
A Manual of California Vegetation	Coast Live Oak Series	N/A
NatureServe Habitat	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> Woodland	.A.5.N.a
Dominant Species	<i>Platanus racemosa</i> <i>Quercus agrifolia</i> <i>Brickellia californica</i>	
Date	10/15/2007	
Disturbances	There are localized impacts from grazing and trails created by aliens. The area burned in the past.	
Quality Assessment	This habitat is generally of high quality. The understory of the oak trees is heavily impacted by cattle, but most of the remaining habitat is in good condition, with a very low number of exotic species.	
Notes	This is the area in the bottom of Copper Canyon.	

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Figure 5-10. Photograph Representative of Region 14

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Table 5-11. Vegetation Classifications Region 16

Holland Habitat	Diegan Coastal Sage Scrub	32500
A Manual of California Vegetation	California Encelia Series*	N/A
NatureServe Habitat	Southern California Coastal Scrub	CES206.933
Dominant Species	<i>Viguiera laciniata</i> <i>Bebbia juncea</i>	
Date	10/15/2007	
Disturbances	This area has been burned, possibly in 2003. This area is heavily degraded by grazing. This habitat may have been affected by the drought, though those effects are impossible to distinguish from the combined effects of the above.	
Quality Assessment:	This habitat is of very low quality when compared to similar undisturbed habitats. It is not a pristine habitat, and the habitat is very sparse and has a much larger number of exotic species than would be expected in a pristine habitat condition. The disturbances are so severe that even identifying dominant species is challenging.	
Notes:	*San Diego Sunflower (<i>Viguiera laciniata</i>) replaces Encelia in a similar ecological niche this far south in California. If Encelia is replaced with <i>Viguiera laciniata</i> , the Manuals description fits. This area is extremely steep.	

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Figure 5-11. Photograph Representative of Region 16

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Table 5-12. Vegetation Classifications Region 17

Holland Habitat	Southern Mixed Chaparral	37120
A Manual of California Vegetation	Chamise-Mission Manzanita-Woollyleaf Ceanothus Series	N/A
NatureServe Habitat	Southern California Dry Mesic Chaparral	CES206.930
Dominant Species	<i>Pickeringia Montana</i> <i>Xylococcus bicolor</i> <i>Romneya coulteri</i> var. Unk. <i>Ceanothus tomentosus</i>	
Date	10/15/2007	
Disturbances	This area has been burned, possibly in 2003. This area is degraded by grazing.	
Quality Assessment	This habitat is poor quality and has the heaviest trail activity in the survey area. This habitat is also heavily grazed.	



Figure 5-12. Photograph Representative of Region 17

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Table 5-13. Vegetation Classifications Region 18

Holland Habitat	Southern Coast Live Oak Riparian forest	61310
A Manual of California Vegetation	Coast Live Oak Series	N/A
NatureServe Habitat	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> Woodland	.A.5.N.a
Dominant Species	<i>Baccharis salicifolia</i> <i>Quercus agrifolia</i> <i>Brickellia californica</i>	
Date	10/15/2007	
Disturbances	There are localized impacts from grazing and alien foot-traffic. The area burned in the past.	
Quality Assessment	This habitat is generally of high quality. The habitat is in good condition with a very low number of exotic species for a riparian area in the county. The riparian habitat here is the highest quality riparian habitat of all areas surveyed.	

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Figure 5-13. Photograph Representative of Region 18

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Table 5-14. Vegetation Classifications Region 19

Holland Habitat	Southern Mixed Chaparral	37120
A Manual of California Vegetation	Scrub oak series	N/A
NatureServe Habitat	Southern California Dry Mesic Chaparral	CES206.930
Dominant Species	<i>Quercus cedrosensis</i> <i>Malosma laurina</i> <i>Lotus scoparius</i>	
Date	10/15/2007	
Disturbances	This area has been burned, possibly in 2003. There area is impacted by grazing activity. There are many alien foot-paths in the area.	
Quality Assessment	The habitat in this area is of moderate to poor quality. There are a fair number of invasive exotics and quite a bit of grazing activity. The area appears to be struggling to recover from the 2003 fire due to the drought, and the combination of aliens and grazing activities has spread the exotic invasive species.	



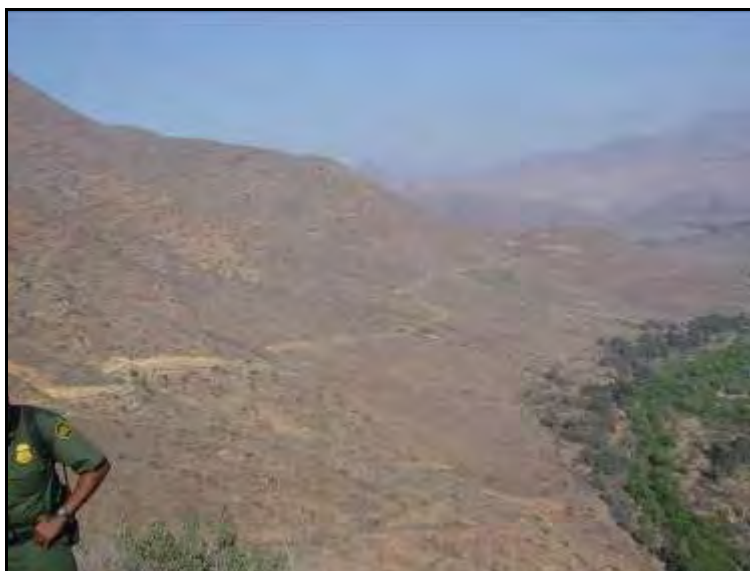
Figure 5-14. Photograph Representative of Region 19

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Table 5-15. Vegetation Classifications Regions 20 and 22

Holland Habitat	Diegan Coastal Sage Scrub	32500
A Manual of California Vegetation	California Encelia Series	N/A
NatureServe Habitat	Southern California Coastal Scrub	CES206.933
Dominant Species	<i>Hirschfeldia incana</i> <i>Lotus scoparius</i> <i>Viguiera laciniata</i> <i>Eriogonum fasciculatum</i> <i>Avena</i> sp.	
Date	10/15/2007	
Disturbances	This area has been burned, possibly in 2003.	
Quality Assessment	This habitat is generally of poor quality. It is a large area, but there are many exotic grasses and forbs degrading the habitat. The habitat is sparse and appears to be suffering from the combined fire and drought, as well as a large number of exotic forbs.	

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Figure 5-15. Photograph Representative of Regions 20 and 22

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Table 5-16. Vegetation Classifications Region 21

Holland Habitat	Chamise Chaparral	37200
A Manual of California Vegetation	Chamise series	N/A
NatureServe Habitat	<i>Adenostema fasciculatum</i> shrubland	CEGL002924
Date	10/15/2007	
Disturbances	This area is recovering from a burn.	
Dominant Species	<i>Adenostema fasciculatum</i>	
Quality Assessment	This habitat is generally of moderate quality. There are a large number of exotic grasses and forbs, though not as many as in the adjacent Regions 20 and 22.	
Notes	This is a strip of chamise chaparral within a larger expanse of highly disturbed coastal sage scrub. This habitat is of better quality than the surrounding coastal sage scrub, habitat but it is still of poor habitat quality. No photo available.	

Table 5-17. Vegetation Classifications Region 23

Holland Habitat	Southern Coast Live Oak Riparian forest	61310
A Manual of California Vegetation	Coast Live Oak Series	N/A
NatureServe Habitat	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> Woodland	.A.5.N.a
Dominant Species	Coast Live Oak	
Date	10/15/2007	
Disturbances	There are localized impacts from grazing and alien foot-traffic. The area burned in the past.	
Quality Assessment	This habitat is generally of high quality. There is a lot of diversity within the floodplain. While exotics are heavier here than in Regions 14 or 18, this habitat is still intact and functioning. The habitat is a wider floodplain than anywhere else in the areas surveyed. It has more microhabitat niches available and greater secondary flow areas for species which prefer those areas.	
Notes	No photo available.	

1

Table 5-18. Vegetation Classifications Region 24

Holland Habitat	Southern Mixed Chaparral	37120
A Manual of California Vegetation	Chamise-Mission Manzanita-Woollyleaf Ceanothus Series	N/A
NatureServe Habitat	Southern California Dry Mesic Chaparral	CES206.930
Dominant Species	<i>Xylococcus bicolor</i> <i>Ceanothus tomentosus</i>	
Date	10/17/2007	
Disturbances	This area has been burned, possibly in 2003. There is no evidence of grazing here, and very little alien trail activity.	
Quality Assessment	This habitat is of high quality and recovering naturally from the burn, though recovery may be slowed somewhat by the 2 years of recent drought.	
Notables	This area was surveyed in the rain.	

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Figure 5-16. Photograph Representative of Region 24

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Table 5-19. Vegetation Classifications Region 25

Holland Habitat	Mafic Southern Mixed Chaparral	37122
A Manual of California Vegetation	Chamise-Mission Manzanita-Woollyleaf Ceanothus Series	N/A
NatureServe Habitat	Southern California Dry Mesic Chaparral	CES206.930
Dominant Species	<i>Ceanothus tomentosus</i> <i>Eriodictyon trichocalyx</i> <i>Mimulus aurantiacus</i> <i>Chamaebatia australis</i> <i>Pickeringia montana</i>	
Date	10/17/2007	
Disturbances	This area has been burned, possibly in 2003. There is no evidence of grazing here, and very little alien trail activity.	
Quality Assessment	This habitat is of high quality and recovering naturally from the burn, though recovery may be slowed somewhat by the 2 years of recent drought.	
Notes	This habitat association is known for the number of rare species found within it. This area was surveyed in the rain. This is an unusual habitat formation that is common in parts of Otay Mountain, but is not known to occur elsewhere. No habitat mapping system appears to adequately address this association. It is likely this chaparral/burned Tecate cypress forest is the dominant habitat along the entire Puebla tree spur off the Otay Mountain truck trail. No photo available.	

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1 5.2 Plant Species Identified

2 A complete plant list of all species identified during the field surveys, including
 3 the fence section in which it was identified, is provided in **Table 5-1**.

4 **Table 5-20. Complete Plant List of all Species Identified**

Scientific Name	Common Name	A-1	A-2	A-1 Access Road (Survey not completed)
<i>Achnatherum coronatum</i>	Giant needlegrass	X	X	X
<i>Acourtia microcephala</i>	Sacapellote		X	
<i>Adenostema fasciculatum</i>	Chamise	X	X	X
<i>Ageratina adenophora</i>	Sticky thorough-wort		X	
<i>Ambrosia monogyra</i>	Single-whorl burrow-brush	X		
<i>Ambrosia psilostachya</i>	Naked-spike ambrosia		X	
<i>Antirrhinum nuttallianum</i>	Violet snapdragon		X	
<i>Arctostaphylos glauca</i>	Bigberry Manzanita		X	
<i>Arctostaphylos otayensis</i>	Otay Manzanita	X		X
<i>Artemisia californica</i>	California sagebrush	X	X	X
<i>Arundo donax</i>	Giant reed		X	
<i>Asclepias fascicularis</i>	Narrowleaf milkweed	X		
<i>Atriplex semibaccata</i>	Australian saltbush	X	X	X
<i>Avena</i> sp.	Wild oat	X	X	X
<i>Baccharis salicifolia</i>	Willow-leaf false willow	X	X	X
<i>Baccharis sarothroides</i>	Desert broom false willow		X	
<i>Bebbia juncea</i>	Sweetbush	X		
<i>Bothriochloa barbinodis</i>	Cane bluestem	X		
<i>Brickellia californica</i>	California brickellbush	X	X	
<i>Brodiaea pulchellum</i>	Brodiaea		X	
<i>Brodiaea</i> sp.	Brodiaea		X	
<i>Bromus diandrus</i>	Ripgut brome	X	X	
<i>Bromus madritensis</i>	Compact brome		X	
<i>Bromus mollis</i>	Soft brome	X	X	
<i>Bromus rubens</i>	Red brome		X	
<i>Bromus</i> sp.	Brome	X		X
<i>Calochortus</i> sp.	Mariposa lily	X	X	
<i>Calystegia macrostegia</i>	Island false bindweed	X	X	X
<i>Carex spissa</i>	San Diego sedge	X	X	
<i>Castilleja</i> sp.	Indian paint brush		X	
<i>Caulanthus</i> sp.	Wild cabbage	X		
<i>Ceanothus leucodermis</i>	Chaparral whitethorn		X	

Scientific Name	Common Name	A-1	A-2	A-1 Access Road (Survey not completed)
<i>Ceanothus otayensis</i>	Otay Mountain ceanothus	X		X
<i>Ceanothus tomentosus</i>	Woolyleaf ceanothus	X		X
<i>Centaurea melitensis</i>	Maltese star thistle	X	X	X
<i>Cercocarpus minutiflorus</i>	Smooth mountain mahogany			X
<i>Chamaebatia australis</i>	Southern mountain misery			X
<i>Cheilanthes</i> sp.	Cloak fern	X		
<i>Cirsium occidentale</i>	Cobweb thistle	X	X	
<i>Cirsium vulgare</i>	Bull thistle	X	X	
<i>Clematis pauciflora</i>	Ropevine clematis		X	
<i>Cneoridium dumosum</i>	Bush rue		X	
<i>Cordylanthus rigidus</i>	Stiffbranch bird's beak		X	
<i>Cryptantha</i> sp.	Cryptantha	X	X	
<i>Cupressus forbesii</i>	Tecate cypress	X		X
<i>Cuscuta</i> sp.	Dodder	X	X	
<i>Daucus pusillus</i>	American wild carrot	X	X	
<i>Delphinium</i> sp.	Larkspur		X	
<i>Dendromecon rigida</i>	Tree poppy	X		
<i>Dicentra chrysantha</i>	Golden eardrops	X	X	
<i>Dudleya blachmaniae</i> ssp. <i>brevifolia</i>	Short leaved dudleya		X	
<i>Dudleya edulis</i>	Fingertips	X		
<i>Dudleya pulverulenta</i>	Chalk dudleya	X	X	
<i>Croton setigerus</i>	Dove weed		X	
<i>Epilobium canum</i>	Hummingbird trumpet	X		
<i>Erigeron foliosus</i>	Leafy daisy		X	
<i>Eriodictyon trichocalyx</i>	Smoothleaf Yerba Santa	X	X	X
<i>Eriogonum fasciculatum</i>	Flat-top buckwheat		X	
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	Eastern Mojave buckwheat		X	
<i>Eriophyllum confertiflorum</i>	Golden Yarrow		X	
<i>Erodium botrys</i>	Long-beaked storkbill		X	
<i>Erodium</i> sp.	None	X		
<i>Eucalyptus</i> sp.	Eucalyptus		X	
<i>Ferocactus viridescens</i>	San Diego barrel cactus	X		
<i>Filago</i> sp.	Cudweed	X	X	
<i>Foeniculum vulgare</i>	Fennel	X	X	
<i>Gallium</i> sp.	Bedstraw		X	X
<i>Gastridium ventricosum</i>	Nit grass	X		
<i>Gnapahalium stramineum</i>	Cotton batting	X	X	X

Scientific Name	Common Name	A-1	A-2	A-1 Access Road (Survey not completed)
<i>Gnaphalium bicolor</i>	Two-tone everlasting	X	X	
<i>Gnaphalium californicum</i>	California everlasting	X		X
<i>Gnaphalium luteo-album</i>	Weedy cudweed	X		
<i>Gutierrezia californicum</i>	California snakeweed	X		
<i>Gutierrezia sarothrae</i>	Broom snakeweed	X	X	
<i>Hazardia squarrosa</i>	Sawtooth goldenbush	X	X	X
<i>Hedypnois cretica</i>	Crete weed	X		
<i>Helianthemum scoparium</i>	Common sun rose	X	X	X
<i>Helianthus</i> sp.	Sunflower		X	
<i>Hemizonia</i> sp.	Tarweed	X		
<i>Heteromeles arbutifolia</i>	Christmas Berry	X		X
<i>Hirschfeldia incana</i>	Mediterranean mustard	X	X	X
<i>Hypochoeris</i> sp.	None		X	
<i>Isocoma menziesii</i>	Coast goldenbush	X		
<i>Isomeris arborea</i>	Bladderpod			X
<i>Iva havesiana</i>	San Diego marsh elder	X		X
<i>Juncus acutus</i>	Spiny rush	X		X
<i>Keckiella antirrhinoides</i>	Yellow bush snapdragon		X	
<i>Keckiella cordifolia</i>	Climbing penstemon			X
<i>Keckiella ternata</i>	Summer bush penstemon			X
<i>Lamarckia aurea</i>	Goldentop grass	X		
<i>Lathyrus</i> sp.	None			X
<i>Lepidium</i> sp.	Pepperweed	X	X	
<i>Lessingia filaginifolia</i>	Common California aster	X	X	X
<i>Lonicera subspicata</i>	Honeysuckle	X	X	
<i>Lotus argophyllus</i>	Silver bird's foot trefoil		X	
<i>Lotus scoparius</i>	Deerweed	X	X	X
<i>Lythrum californica</i>	None	X		
<i>Malocothamnus fasciculatus</i>	Bush mallow	X	X	X
<i>Malocothamnus</i> sp.	Bush mallow	X		
<i>Malosma laurina</i>	Laurel sumac	X	X	X
<i>Marah macrocarpus</i>	Wild cucumber		X	
<i>Marrubium vulgare</i>	Horehound		X	
<i>Melilotus</i> sp.	Sweetclover		X	
<i>Melica frutescens</i>	Woody melicgrass	X		
<i>Mellica imperfecta</i>	Coast range melic		X	
<i>Mimulus aurantiacus</i>	Bush monkeyflower	X	X	X
<i>Mimulus brevipes</i>	Yellow monkeyflower		X	

Scientific Name	Common Name	A-1	A-2	A-1 Access Road (Survey not completed)
<i>Mimulus guttatus</i>	Seep monkeyflower		X	
<i>Mirabilis californica</i>	Wishbone bush	X		
<i>Nassella</i> sp.	Purple needlegrass		X	
<i>Navarretia</i> sp.	Pincushionplant	X	X	
<i>Nicotiana glauca</i>	Tree tobacco		X	
<i>Opuntia littoralis</i>	Coast prickly pear	X		
<i>Ornithostaphylos oppositifolia</i>	Baja bird bush		X	
<i>Osmondenia tenella</i>	None	X	X	
<i>Paeonia californica</i>	California peony		X	
<i>Pellaea</i> sp.	None	X	X	
<i>Penstemon spectabilis</i>	Showy penstemon	X		
<i>Penstemon</i> sp.	Penstemon		X	
<i>Phacelia cicutaria</i>	Caterpillar phacelia		X	
<i>Phacelia</i> sp.	None		X	
<i>Pickeringia montana</i>	Chaparral pea	X	X	X
<i>Pityrogramma</i> sp.	None	X	X	X
<i>Plantago erecta</i>	Plantain	X	X	
<i>Platanus racemosa</i>	Western sycamore	X		
<i>Polypogon monspeliensis</i>	Annual beardgrass	X		
<i>Populus fremontii</i>	Western cottonwood		X	
<i>Porophyllum gracile</i>	Slender Poreleaf	X		
<i>Prunus ilicifolia</i>	Hollyleaf cherry			X
<i>Quercus agrifolia</i>	Coast live oak		X	
<i>Quercus berberidifolia</i>	Scrub oak		X	
<i>Quercus cedrosensis</i>	Cedros oak	X		X
<i>Rhamnus crocea</i>	Redberry		X	X
<i>Rhus ilicifolia</i>	Lemonadeberry	X		
<i>Rhus ovata</i>	Sugarbush		X	
<i>Ribes</i> sp.	Gooseberry	X		X
<i>Romneya coulteri</i>	Matilija Poppy	X	X	X
<i>Rosa minutifolia</i>	Small leaved rose			
<i>Rumex crispus</i>	Curly dock	X		
<i>Rumex</i> sp.	None		X	
<i>Salix gooddingii</i>	Goodding's willow		X	
<i>Salix lasiolepis</i>	Arroyo willow		X	
<i>Salsola tragus</i>	Russian thistle	X		X
<i>Salvia apiana</i>	White sage	X	X	
<i>Salvia clevelandii</i>	Cleveland's sage			
<i>Salvia columbariae</i>	Chia		X	

Scientific Name	Common Name	A-1	A-2	A-1 Access Road (Survey not completed)
<i>Salvia munzii</i>	Munz's sage	X		
<i>Sambucus mexicana</i>	Mexican elderberry		X	
<i>Schinus molle</i>	Peruvian peppertree		X	
<i>Schismus barbatus</i>	Common Mediterranean grass		X	
<i>Scirpus</i> sp.	None		X	
<i>Scrophularia californica</i>	Figwort	X	X	
<i>Selaginella bigelovii</i>	Spike moss	X	X	
<i>Selaginella cinerescens</i>	Ashy spike moss	X	X	X
<i>Silene gallica</i>	Small-flower catchfly			
<i>Simmondsia chinensis</i>	Jojoba	X		
<i>Solanum</i> sp.	Nightshade	X		
<i>Solidago occidentalis</i>	Goldenrod		X	X
<i>Stachys rigida</i>	Rough hedge-nettle		X	
<i>Stephanomeria virgata</i>	Virgate wire-lettuce	X		
<i>Stylocline gnaphalioides</i>	New-straw cotton-weed		X	
<i>Tamarix ramosissima</i>	salt-cedar		X	
<i>Thysanocarpus</i> sp.	Fringepod		X	
<i>Toxicodendron diversilobum</i>	Western poison-oak		X	
<i>Trichostema</i> sp.	Bluecurls	X		
<i>Urtica dioica</i>	Stinging nettle		X	
<i>Viguiera laciniata</i>	San Diego County viguiera	X		
<i>Vinca major</i>	Large-leaf Periwinkle		X	
<i>Xanthium</i> sp.	Cocklebur		X	
<i>Xylococcus bicolor</i>	Mission Manzanita	X	X	X
<i>Yucca whipplei</i>	Our-lord's-candle	X	X	X
Total number of species per section or access road:		100	113	47

- 1 Notes:
- 2 Species listed for Section A-1 and A-1 access road have not been completed as of the date of
- 3 report submittal.
- 4 Section A-2 species list is complete as of the date of report submittal.
- 5

5.3 Proposed Fence Section Characteristics and Description of Habitat Quality

A general description of the habitat quality and the characteristics of each section are provided below.

SECTION A-1

Potential Listed Plant Occurrence	San Diego ambrosia (<i>Ambrosia pumila</i>) (FE) San Diego button-celery (<i>Eryngium aristulatum</i> var. <i>parishii</i>) (FE, SE) Otay tarplant (<i>Deinandra conjugens</i>) (FT, SE) Otay Mesa mint (<i>Pogogyne nudiuscula</i>) (FE, SE) Spreading navarretia (<i>Navarretia fossalis</i>) (FT) Mexican flannelbush (<i>Fremontodendron mexicanum</i>) (FE) California Orcutt grass (<i>Orcuttia californica</i>) (FE, SE) Encinitas baccharis (<i>Baccharis vanessae</i>) (FT, FE)
Listed Plants Observed	None
Suitable Listed Plant Habitat Present	Yes
If So, Habitat Quality	Large variations of poor to good-quality habitat.

FE = federally endangered; FT = federally threatened; SE = state endangered

Section Habitat Description: This section covers approximately 5.2 miles on BLM managed lands. It mostly follows the Pack Trail, a footpath on the south side of Otay Mountain. The section starts at the Puebla Tree, a well-known border patrol landmark, and ends at boundary marker 250. Topographically, the terrain is steep along most of the trail. The trail skirts the mid-span of the mountain, so that steep upslopes lead out of canyons, and steep downslopes lead into another canyon. The trail crosses Copper, Buttewig, and Mine Canyons. In addition, a drainage known as Wild Bill's is located at the beginning of the Pack Trail, nearby the Puebla Tree.

Much of Section A-1 is grazed illegally by cows, and several cows were observed during natural resource surveys. Numerous north-south trending footpaths from cows and aliens can be seen over much of the mountain. Portions of the mountain burned during the 2003 Cedar fire and show signs of recovering. Much of the area where coastal sage scrub communities are dominant (a large area of the Pack Trail) is considered disturbed and of poor quality. Areas of chaparral are of moderate quality, and riparian areas dominated by Coast live oak in the canyon bottoms are considered high-quality habitat.

Existing access roads on the west and east ends of the Pack Trail make up a total of over 13 miles of access roads that require a range of improvements. On the west side of the Pack Trail, the existing access road will begin off Alta Road and end at the Puebla Tree. This access road is approximately 5.59 miles in

length. Much of the BLM road which generally leads down the west side of Otay Mountain will require significant improvements to allow truck and heavy equipment ingress/egress.

On the east side of the Pack Trail, from the point where Boundary Marker 250 is located to Interstate 94 is approximately 7.81 miles. Several areas of these unpaved existing access roads will require improvements, such as wider turnouts, reinforcements, and culverts.

Several Tecate cypress were found within each of the three drainages (Mine, Copper, and Buttewig Canyons), in Wild Bill's Canyon at the beginning of the Pack Trail (not part of the current alignment, but part of a former alignment), and along the BLM access road from the Puebla Tree to approximately one-half mile northwest.

[[Preparer's Note: Tecate cypress likely extends beyond one-half mile from the Puebla Tree; however, at the time of this draft report submittal, the survey had only been completed to that point. The extent of Tecate cypress will be revised when the survey is completed.]]

No other listed plants were observed during the survey.

Listed wildlife species observed during the surveys along Section A-1 include several sightings of rufous-crowned sparrow, coast patch-nosed snake, orange-throated whiptail lizard, Cooper's hawk, northern harrier, and San Diego black tailed jackrabbit. In addition, Harbison dun skipper larvae and golden eagle were observed while surveying the access road (BLM Road) leading to the Puebla Tree.

SECTION A-2

Potential Listed Plant Occurrence	San Diego ambrosia (<i>Ambrosia pumila</i>) (FE) San Diego button-celery (<i>Eryngium aristulatum</i> var. <i>parishii</i>) (FE, SE) Otay tarplant (<i>Deinandra conjugens</i>) (FT, SE) Otay Mesa mint (<i>Pogogyne nudiuscula</i>) (FE, SE) Spreading navarretia (<i>Navarretia fossalis</i>) (FT) Mexican flannelbush (<i>Fremontodendron mexicanum</i>) (FE) California Orcutt grass (<i>Orcuttia californica</i>) (FE, SE) Encinitas baccharis (<i>Baccharis vanessae</i>) (FT, FE)
Listed Plants Observed	None
Suitable Listed Plant Habitat Present	Yes
If So, Habitat Quality	Poor to high-quality habitat.

Section Habitat Description: Section A-2, approximately 0.7 mile in length, begins at the point where the existing fence that extends from the east side of the Tecate port of entry (POE) ends, and continues up a short slope. The alignment in this section follows the international border. Over 2 miles of access roads are proposed for this section, and one staging area along the access road that parallels the existing fence.

High-quality CSS habitat exists in some areas of the section that are dominated by *Artemisia californica* and *Malosma laurina*. An occupied house with a fenced yard is within the section where the area is dominated by Coast live oak riparian habitat. The understory of this habitat is mainly non-native species. Much of the section is a non-native grassland, with dominant species being *Bromus* sp. and *Avena* sp.

No federally listed plants were observed during the surveys in Section A-2. Federally listed wildlife observed during A-2 surveys include coast patch-nosed snake and orange throated whiptail.

In late October 2007, most of the alignment and associated access roads were burned in the Harris fire. Figure 16 shows an overview of the burned area looking east at the start of section A-2, and Figure 17 depicts the burn area within the survey corridor.



Figure 5-17. Burn Area Looking East (Photographed November 14, 2007)
(Note that the stand of coast live oaks [extending from the left side of the photo] within the survey corridor did not burn.)



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Figure 5-18. Section A-2 Post-fire (Photographed November 14, 2007)

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5.4 Wetlands and Waters of the United States

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Delineations for wetlands and Waters of the United States (WOUS) have not yet been conducted but is scheduled for January 2008. The most current information available to identify wetlands is the National Wetlands Initiative (NWI) (USFS 2007). There are no NWI wetlands in Sections A-1 or A-2. Approximately 2.4 acres of riverine wetlands are estimated by aerial photography review. This information will be confirmed by the field delineation.

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5.5 Wildlife Observed

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Forty-one species of vertebrates were recorded during the October and December 2007 surveys, including 2 reptiles, 33 birds, and 6 mammals. In addition, a total of 32 insects were observed and identified during the surveys. Section A-1, as with vegetation, was the most species-rich, with 29 wildlife species recorded.

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Although one larva of the state-listed species of concern Harbison dun skipper was observed, there is potential for the following to occur:

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- Harbison's dun skipper (*Euphyes vestris harbisoni*) (SC)
- Hermes copper butterfly (*Lycaena hermes*) (SC)
- Thorne's hairstreak (*Callophrys thornei*) (SC, MSCP, BLM)
- Quino checkerspot butterfly (*Euphydryas editha quino*) (FE, SC).

1 **Harbison dun skipper (SC).** The larva of a Harbison's dun skipper was
2 observed during the survey of the Puebla Tree access road on December 3,
3 2007. Host plants of the Harbison dun skipper (San Diego Sedge [*Carex spisa*])
4 were observed within the canyon bottom of the Puebla Tree access road. The
5 sedge observed was clearly defoliated by grazing; therefore, any potential
6 occupation by caterpillars could not be assessed.

7 Several sedge plants and indications of one larval feeding were observed within
8 Copper Canyon (the first canyon the Pack Trail crosses from west to east). Butte-
9 wig Canyon also had recovering sedge, but in this canyon it showed signs of
10 drought stress and did not appear as robust as would be expected (Klein 2007).

11 **Hermes copper (SC).** Because the 2003 Otay Fire burned the area of A-1 and
12 associated access roads, it is currently too soon for adults to recolonize this area.
13 Many recovering redberry shrubs, which are their host plant (*Rhamnus crocea*),
14 were observed throughout the Pak Trail. None of the host plants are currently
15 occupied; however, the adult flight season occurs mid-May through early July,
16 which would be the best time to assess their presence in the area.

17 **Thorne's hairstreak (SC, MSCP, BLM).** The only host plant of Thorne's
18 hairstreak is the Tecate cypress (*Cupressus forbesii*), and prior to the Otay Fire
19 of 2003, Otay Mountain contained the largest stand of Tecate cypress in the
20 world. The Otay Fire in October 2003 burned nearly 90 percent of the cypress on
21 Otay Mountain. The tree is a closed-cone conifer, meaning that viable seeds will
22 disperse when the cones open in response to a catastrophic event, such as fire.
23 Fire is the typical dispersal mechanism; however, old age and warm
24 temperatures can also cause the cones to open. Reproductive maturity of Tecate
25 cypress occurs sometime after the tree is 20 years old. Of the nearly 500 acres
26 of cypress remaining on the mountain after 2003, only about 180 acres are
27 mature enough to reproduce. Several Tecate cypress were found within each of
28 the three drainages (Mine, Copper, and Buttewig Canyons), in Wild Bill's Canyon
29 near the beginning of the Pack Trail, and along the BLM access road from the
30 Puebla Tree to approximately one-half mile northwest.

31 Since the 2003 Fire it has been observed that adults are mating on Cypress trees
32 between 6 and 7 years old (Klein 2007). If mating is occurring on young trees,
33 the usual biology for the Thorne's hairstreak is that the female will lay eggs on
34 the tree where mating happens. So even though the tree is not at reproductive
35 maturity, it appears that a six or seven year old tree is mature enough for egg
36 laying.

37 The hairstreak occurs along the Otay Mountain Truck Trail on the west side of
38 the mountain only. There are no confirmed records that it occurred along the
39 Puebla Pak Trail but the position which has been taken by many Lepidopteran
40 experts is that if a host is mature for egg laying it is usually occupied (Klein
41 2007). There was evidence of reproductively mature trees within the Puebla Tree
42 access road, Copper Canyon, Buttewig Canyon and the drainage near Mine
43 Canyon which accesses the Monument 250 Truck Trail. In all locations saplings

1 were observed that may serve as host plants if they reach the age of 6 to 7
2 years.

3 **Quino checkerspot butterfly (FE, SC).** The host plants of Quino are dwarf
4 plantain (*Plantago erecta*), purple owl's clover (*Castilleja exserta*), white
5 snapdragon (*Antirrhinum coulterianum*), woolly plantain (*Plantago patagonica*),
6 and bird's beak (*Cordylanthus rigidus*). The plants are annuals that occur in clay
7 soils as well as other soil types; however, these plants appear to thrive in clay
8 soils.

9 Three of the host plants occur along Section A-1. Suitable habitat occurs
10 throughout the entire Otay Mountain. In addition, adult Quino were observed in
11 March 2005, March 2007, and an undated recent occurrence in the general
12 project area. Additional occurrences have been documented on the mountain.

13 The butterfly's biology is somewhat unique for butterflies in general, in that the
14 third or fourth larval growth (instar) will enter into its winter stasis (diapause)
15 sometime in May. It remains this way until sufficient winter rains stimulate plant
16 growth. If sufficient plant growth occurs, then the caterpillars come out diapause
17 and continue feeding until they reach larval maturity, pupate, and then finally
18 emerge as adults. If the winter rains are appropriate, caterpillars could emerge
19 from diapause sometime in January. Pupation occurs sometime in February, and
20 adults emerge in March. Once adults emerge, the cycle begins all over. Adults
21 also will disperse to suitable habitat and are known to disperse anywhere from 1
22 to 3 kilometers a year. Dispersal distance can be greater if it is wind-assisted.

23 **Table 5-3** lists wildlife observed during the field surveys. The table provides a
24 general indication of species richness in each section.

25 **Table 5-3. Wildlife Observed During Natural Resources Surveys**
26 **Conducted October 11, 12, 15, and 17, and December 3–5, 2007**

Common Name/Scientific Name	Status	BLM Access Road	A-1	A-2
Insects				
Ant Lion/Family: Myrmeleontoidea	C			X
Band-Wing Grasshopper/ <i>Camnula pellucida</i>	C		X	X
Bee Fly/Family: Bombyliidae	C			X
Behr's Metalmark/ <i>Apodemia virgulti</i>	C		X	X
Blister Beetle/Family: Meloidae	C		X	
Blue Mud Wasp/ <i>Chalybion californicum</i>	C		X	
Cactus Fly/Family: Neriidae	C		X	
California Dancer/ <i>Argia agrioides</i>	C		X	
California Harvester Ant/ <i>Pogonomyrmex californicus</i>	C		X	X
Cardinal Meadowhawk/ <i>Sympetrum illotum</i>	C		X	
Drone Fly/ <i>Eristalis tenax</i>	C		X	

Common Name/Scientific Name	Status	BLM Access Road	A-1	A-2
Insects (continued)				
Field Cricket/ <i>Gryllus</i> sp.	C		X	
Fiery Skipper/ <i>Hylephila phyleus</i>	C		X	
Flesh Fly/Family: Sarcophagidae	C		X	X
Forktail Damselfly <i>Ischnura barberi</i>	C		X	
Gall Midge/Family: Cecidomyiidae	C		X	
Harbison dun skipper (larva)/ <i>Euphyes vestris harbisoni</i>	SC	X		
Harlequin Bug/ <i>Murgantia histrionic</i>	C		X	
Honey Bee/ <i>Apis mellifera</i>	C		X	X
Horse Fly/Family: Tabanidae	C		X	
Monarch/ <i>Danaus plexippus</i>	C			X
Muscid Fly/Family: Muscidae	C		X	
Painted Lady/ <i>Vanessa cardui</i>	C	X	X	X
Seven Spotted Ladybird Beetle/ <i>Coccinella septempunctata</i>	C		X	
Spittle Bug/ <i>Aphrophora</i> sp.	C		X	
Stink Beetle/ <i>Eleodes</i> sp.	C		X	X
Thread-Waisted Wasp/ <i>Ammophila</i> sp.	C		X	X
Tiger Moth/ <i>Cisthene</i> sp.	C		X	
Variegated Meadowhawk/ <i>Sympetrum corruptum</i>	C		X	
Velvet Ant/ <i>Dasymutilla</i> sp	C		X	X
Vivid Dancer/ <i>Argia vivida</i>	C		X	
Wasp/ <i>Pepsis</i> sp	C		X	
Wasp/ <i>Polistes</i> sp	C		X	
Reptiles				
Coast Patch-Nosed Snake/ <i>Salvadora hexalepis virgulata</i>	SC		X	X
Orange-Throated Whiptail Lizard/ <i>Cnemidophorus hyperythrus beldingi</i>	SC		X	X
Birds				
Acorn Woodpecker/ <i>Melanerpes formicivorus</i>	C			X
American Kestrel/ <i>Falco sparverius</i>	C		X	
Anna's Hummingbird/ <i>Calypse anna</i>	C		X	
Black-Headed Grosbeak/ <i>Pheucticus melanocephalus</i>	C		X	
Black Phoebe/ <i>Sayornis nigricans</i>	C		X	
Bewick's Wren/ <i>Thryomanes bewickii</i>	C		X	
California Towhee/ <i>Pipilo crissalis</i>	C		X	
California Quail/ <i>Callipepla californica</i>	C		X	
Common Raven/ <i>Corvus corax</i>	C		X	X
Copper's Hawk/ <i>Accipiter cooperii</i>	SC		X	
Dark-Eyed Junco/ <i>Junco hyemalis</i>	C		X	

Common Name/Scientific Name	Status	BLM Access Road	A-1	A-2
Birds (continued)				
European Starling/ <i>Sturnus vulgaris</i>	C		X	
Fox Sparrow/ <i>Passerella iliaca</i>	C			X
House Finch/ <i>Carpodacus mexicanus</i>	C			X
Golden Eagle/ <i>Aquila chrysaetos</i>	BEPA/FP/SC		X	
Lesser Goldfinch/ <i>Carduelis psaltria</i>	C			X
Mourning Dove/ <i>Zenaida macroura</i>	C		X	
Northern Harrier/ <i>Circus cyaneus</i>	SC		X	
Northern Flicker/ <i>Colaptes auratus</i>	C		X	X
Nuttall's Woodpecker/ <i>Picoides nuttallii</i>	C		X	
Pacific-Slope Flycatcher/ <i>Empidonax difficilis</i>	C			X
Plain Titmouse/ <i>Baeolophus inornatus</i>	C			X
Red-tailed Hawk/ <i>Buteo jamaicensis</i>	C		X	X
Rock Wren/ <i>Salpinctes obsoletus</i>	C		X	X
Ruby-Crowned Kinglet/ <i>Regulus calendula</i>	C		X	
Rufous-Crowned Sparrow/ <i>Aimophila ruficeps</i>	SC		X	X
Say's Phoebe/ <i>Sayornis saya</i>	C		X	
Scrub Jay/ <i>Aphelocoma californica</i>	C		X	X
Spotted Towhee/ <i>Pipilo maculatus</i>	C		X	X
Western Bluebird/ <i>Sialia mexicana</i>	C			X
White-Crowned Sparrow/ <i>Zonotrichia leucophrys</i>	C		X	X
Wrentit/ <i>Chamaea fasciata</i>	C			X
Yellow-Rumped Warbler/ <i>Dendroica coronata</i>	C		X	
Mammals				
Coyote/ <i>Canis latrans</i>	C			X
Desert Woodrat/ <i>Neotoma lepida</i>	C			X
Gray Fox/ <i>Urocyon cinereoargenteus</i>	C			X
Mule Deer/ <i>Odocoileus hemionus</i>	C		X	
San Diego Black-Tailed Jackrabbit/ <i>Lepus californicus bennettii</i>	SC		X	
Striped Skunk/ <i>Mephitis mephitis</i>	C			X
	Total # Species Per Section:	2	58	34

1 Note: C = Common; FP = Federally Protected; SC = Special concern (State Designation);

2 BEPA = Bald Eagle Protection Act

6. Avoidance and Minimization Measures

As part of the coordination between USBP and USFWS, best management practices are under development for building, operating, and maintaining the proposed tactical infrastructure. The best management practices are designed to avoid and minimize impacts to biotic resources, specifically threatened and endangered resources. These measures will be presented in the final report.

7. Permits, Technical Studies, and Notifications

To comply with state and federal regulations, the following permits should be investigated or conducted to assess whether regulatory requirements have been met. Note that additional permits, studies, or notifications not listed herein may also be required.

Permits			
Permit Type	Issuing Agency	Reason	Legislation
404 Permit	USACE	Wetland and WOUS delineation	<p>Section 404 of the Clean Water Act (CWA) authorizes the USACE to issue permits regulating the discharge of dredged or fill material into the waters of the United States, including wetlands.</p> <p>General permits are often issued by USACE for categories of activities that are similar in nature and would have only minimal individual or cumulative adverse environmental effects. A general permit can also be issued on a programmatic basis ("programmatic general permit") to avoid duplication of permits for state, local, or other federal agency programs.</p>

Permits			
Permit Type	Issuing Agency	Reason	Legislation
401 Water Quality Certification	California Regional Water Quality Control Board	Wetland and WOUS delineation	Section 401(a)(1) of the CWA specifies that any applicant for a federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency a certification from the state in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate, that any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act (SWRCB 2007).
Streambed Alteration Agreement	California Department of Fish and Game	Prevention of altering streamflow, changing bottom material, or depositing material in rivers, streams, or lakes in CA.	State of California Fish and Game (CFG) Code section 1602 requires any person, state or local governmental agency, or public utility to notify CFG before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.
MSCP Compliance/ Boundary Line Adjustment	City of San Diego	Multiple Habitat Planning Area (MHPA) boundary adjustment may be required on city property.	Section 5.4.2 of the Regional MSCP Plan.

Permits			
Permit Type	Issuing Agency	Reason	Legislation
Section 7 (ESA) Consultation	USFWS	Allow the proposed action to proceed while avoiding impacts to listed species.	Section 7 of the ESA directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to the management of federal lands as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of federal funding, permits, licenses, or other actions.
Migratory Bird Treaty Act (MBTA) coordination (Migratory Bird Depredation Permit)	USFWS	Fence constructed during breeding season.	The MBTA established a federal prohibition, unless permitted by regulations, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird ... or any part, nest, or egg of any such bird. The Migratory Bird Depredation Permit is USFWS Form 3-200-13.
Special Use Permits for access to Bureau of Land Management Wilderness Areas	BLM	If requested by BLM.	N/A
Take Permit	CDFG	California Department of Fish and Game Environmental Species Act compliance	Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (CDFG 2007).

1

Notification	
Agency	Contact Information
USFWS	Kurt Roblek Fish and Wildlife Biologist Department of the Interior U.S. Fish & Wildlife Service 6010 Hidden Valley Road Carlsbad, California 92011 Office 760-431-9440 ext. 308 Fax 760-431-5902
BLM	Janaye Byergo San Diego Project Manager 10845 Rancho Bernardo Road, Suite 200 San Diego, California 92127 Office 858-451-1767 Fax 858-676-9934 Joyce Schlachter Biologist 10845 Rancho Bernardo Road, Suite 200 San Diego, California 92127 Office 619-468-3839 Fax 858-676-9934
USACE	Jeanine Divis Water Resources Planner U.S. Army Corps of Engineers 3636 N Central Ave, Suite 900 Phoenix, AZ 85012-1939 Phone 602-640-2004 ext 286 Fax: 602-640-5382
California Department of Fish and Game	No contact available at this time.
City of San Diego	No contact available at this time.

2

Additional Studies	
Agency	Study
USACE	Wetland and WOUS Delineation and Determination

8. List of Preparers

1

2 **Domenick Alario**

3 B.A. Geography

4 Years of Experience: 2

5 **David Boyes, REM, CHMM**

6 M.S. Natural Resources

7 B.S. Applied Biology

8 Years of Experience: 31

9 **Kevin Clark**

10 B.S. Biology

11 Years of Experience: 12

12 **Rod Dossey**

13 B.S. Ecology

14 Year of Experience: 11

15 **A. Brent Eastty**

16 B.S. Biology

17 Years of Experience: 6

18 **Stuart Gottlieb**

19 B.A. Geography

20 GIS Professional Certificate

21 Years of Experience: 5

22 **Shawn Gravatt**

23 M.S. Environmental Studies

24 B.S. Earth Science and Geography

25 Years of Experience: 10

26 **Brian Hoppy**

27 B.S. Biology

28 Certified Environmental Manager

29 Years of Experience: 17

30 **Michael Klein**

31 B.B.A Biology

32 M.B.A.

33 Years of Experience: 24

34 **Ronald E. Lamb**

35 M.S. Environmental Science

36 M.A. Political Science/International

37 Economics

38 B.A. Political Science

39 Years of Experience: 22

40 **Cheryl Myers**

41 A.A.S. Nursing

42 Years of Experience: 17

43 **Cheryl Schmidt, Ph.D.**

44 B.S. Biology

45 M.S. Biology

46 Ph.D. Biology

47 Years of Experience: 22

48 **Sarah Spratlen**

49 Masters of Engineering

50 Years of Experience: 5

51 **Karen Stackpole**

52 B.S. Biology

53 M.S. Environmental Science and

54 Education

55 Years of Experience: 9

56 **Jim Von Loh**

57 B.S. Biology

58 M.S. Biology

59 Years of Experience: 32

60 **Lauri Watson**

61 B.S. Environmental Science

62 Years of Experience: 5

63 **Valerie Whalon**

64 M.S. Fisheries Science

65 B.S. Marine Science

66 Years of Experience: 12

67

1

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**BIOLOGICAL SURVEY
APPENDIX A**

DESCRIPTION OF FEDERALLY LISTED SPECIES

Arroyo toad (*Bufo californicus*)

The arroyo toad was listed as endangered on December 16, 1994.

Distribution: The arroyo toad once ranged from San Luis Obispo County, CA, south to northwestern Baja California, Mexico. Now extirpated in San Luis Obispo County, they are currently found in headwater areas of streams in Santa Barbara, Ventura, Los Angeles, Riverside, and San Diego Counties. Scattered individuals have been reported from Orange, San Bernardino and southern Imperial counties. Found along the Santa Margarita, Guejito, Sweetwater, Vallecito, San Luis Rey, Santa Ysabel, Witch, Cottonwood, Temescal, Agua Caliente, Santa Maria, Lusardi, Pine Valley, Nobel, Kitchen, Long Potrero, Upper San Diego, San Vicente, and Morena drainages in San Diego County.

Natural History:

Habitat: The arroyo toad makes use of washes, streams and arroyos and adjacent uplands, as well as sandy banks in riparian woodlands. Also found along rivers with shallow gravel-bottom pools with adjacent sandy terraces. Adults will burrow in sandy soil for shelter.

Breeding: The arroyo toad breeds from March to early June, independent of rainfall. Eggs are found at the bottom of shallow quiet streams or ponds among gravel, leaves, and sticks, or on mud or clean sand in areas with little to no emergent vegetation. Metamorphosis occurs in June to July.

Diet: Insects

Threats: The arroyo toad is threatened by habitat degradation caused by urbanization, dam construction, ill-timed water releases, agriculture, road construction, off-road vehicle use, overgrazing, mining activities, road construction, drought and wildfires. They are also impacted by recreational use of habitat, predation by introduced fish and bullfrogs, and small population size.

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: November 30, 2007).

1 **California orcutt grass (*Orcuttia californica*)**

2
3 California orcutt grass was listed as threatened on August 3, 1993.

4 **Distribution:** California orcutt grass is found in San Diego County in two vernal
5 pools located near the city of Carlsbad and in four pool complexes on Otay
6 Mesa. The grass also has been observed in Baja California, Mexico.

7 **Natural History:**

8 *Morphology:* California orcutt grass is a small annual grass that reaches about 10
9 centimeters in height with bright green blades that secrete sticky droplets. The
10 inflorescences, borne from May through July, consist of seven spikelets, with the
11 upper spikelets overlapping.

12 *Habitat:* California orcutt grass is an endemic species of vernal pools in Southern
13 California and northern Mexico. Vernal pools are seasonal depressional wetlands
14 where the proliferation of flora and fauna may be related to the Mediterranean
15 climate that prevails throughout their range.

16 **Threats:** Urban and agricultural development and invasion of weedy, non-native
17 species.

18 U.S. Fish and Wildlife Service. 1998. *Vernal Pools of Southern California*
19 *Recovery Plan*. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

20

1 **Coastal California gnatcatcher (*Poliioptila californica californica*)**

2
3 The coastal California gnatcatcher was listed as threatened on March 30, 1993.

4 **Distribution:** The coastal California gnatcatcher is a resident bird species found
5 from Los Angeles County southward to northwestern Baja California, Mexico,
6 extending south to the vicinity of El Rosario, Mexico, and eastward to the eastern
7 base of the Sierra San Pedro Martir. This species has been extirpated from
8 Ventura County.

9 **Natural History:**

10 *Habitat:* The coastal California gnatcatcher makes use of several distinctive
11 subassociations of the coastal sage scrub plant community, particularly
12 communities dominated by California sagebrush (*Artemisia californica*). It
13 generally avoids crossing areas of unsuitable habitat.

14 *Breeding:* This species breeds from February to mid July, with an average clutch
15 size of 3.8 and 3 to 4 clutches laid per year. Incubation is carried out by both
16 sexes and lasts about 14 days, with a 16-day nestling period. Nest is an open
17 cup style.

18 *Diet:* The coastal California gnatcatcher is a ground and shrub-foraging
19 insectivore.

20 **Threats:** The remaining populations of coastal California gnatcatchers are highly
21 fragmented by urban development and expanding transportation corridors. They
22 are also threatened by Brown-headed cowbird parasitism as a result of habitat
23 fragmentation. Wildfires may also have a significant impact.

24 NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web
25 application]. Version 6.2. NatureServe, Arlington, Virginia. Available
26 <http://www.natureserve.org/explorer>. (Accessed: November 30, 2007).
27

Encinitas baccharis (*Baccharis vanessae*)

The Encinitas baccharis was listed as threatened on October 7, 1996.

Distribution: The Encinitas baccharis is endemic to San Diego County, California, and known populations are found near Encinitas in central San Diego County and extend toward Mount Woodson and Poway. One population is found in the Santa Margarita Mountains of northern San Diego County.

Natural History:

Morphology: Encinitas baccharis is a dioecious broom-like shrub that grows from 0.5 to 1.3 meters tall. It has filiform leaves and delicate phyllaries that are reflexed.

Habitat: The Encinitas baccharis is restricted to the southern maritime chaparral, which is a low, fairly open chaparral community. Common species include *Ceanothus verrucosus*, *Xylococcus bicolor*, *Adenostoma fasciculatum* var. *obtusifolium*, *Quercus dumosa*, *Cneoridium dumosum*, *Rhamnus crocea*, *Yucca schidigera*, and occasionally *Dendromecon rigida*.

Threats: Urban and agricultural development.

U.S. Fish and Wildlife Service. 1993. "Endangered and threatened wildlife and plants; proposed rule for six southern maritime chaparral plant taxa from coastal Southern California and northwestern Baja California, Mexico." *Federal Register* 58: 51302–51311.

Least Bell's vireo (*Vireo bellii pusillus*)

The least Bell's vireo was listed as endangered on May 2, 1986.

Distribution: Breeding range was once widespread throughout the Central Valley of California to the Sierra Nevada foothills and Coast Ranges. The breeding range extended into northwestern Baja California, Mexico, and included populations in Death Valley and the Mojave Desert. By 1990, 80 percent of the U.S. population was found along only five drainages: Santa Margarita River, Sweetwater River, San Luis Rey River, San Diego River, and Santa Ana River. Winter range extends to the Cape region of Baja California, with some individuals remaining in Southern California.

Natural History:

Habitat: The least Bell's vireo uses dense brush, mesquite, willow-cottonwood forest, streamside thickets, and scrub oak habitats in arid regions, but frequently near water. Moist woodland, bottomlands, woodland edge, scattered cover and hedgerows are used in cultivated areas, and willow-dominated woodlands are used in riparian areas. Open woodland and brush are used in winter.

Breeding: Migration into the breeding range occurs near the end of March. Nests are constructed in shrubs or low trees about 1 meter above the ground in a horizontal or downsloping twig fork, often near the edge of a thicket. Nesting vegetation in California is frequently willow (*Salix* sp) or rose (*Rosa* sp.). Three to five eggs are laid in a clutch, and incubation lasts 14 days. Both adults tend the young, which fledge at 10 to 12 days. Some pairs may raise multiple broods annually in some areas. Migration out of breeding areas takes place in July to late September, but some individuals will overwinter in the United States.

Diet: Primarily insects, but will also take spiders, snails, and fruits. This species forages in dense brush and sometimes in treetops. They glean prey from leaves and bark but will also hover-hunt and hawk prey.

Threats: Least Bell's vireo has a limited range in Southern California and Baja California and is threatened by habitat loss and nest parasitism by cowbirds.

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: November 30, 2007).

1 **Mexican flannelbush (*Fremontodendron mexicanum*)**

2
3 Mexican flannelbush was listed as endangered on October 12, 1998.

4 **Distribution:** The Mexican flannelbush is endemic to southern San Diego
5 County and northern Baja California, Mexico, between 300 and 1,000 meters in
6 elevation. The only known Californian population, located near Otay Mountain,
7 has less than 100 individuals.

8 **Natural History:**

9 *Morphology:* The Mexican flannelbush, a member of the cacao family, is a small
10 shrub with evergreen, palmately lobed leaves. The flowers are 2.4 inches wide
11 and lack petals, but have showy orange sepals that distinguish the shrub from
12 *Fremontodendron californicum*.

13 *Habitat:* The flannelbush occurs primarily in closed-canopy coniferous forests
14 dominated by Tecate cypress (*Cupressus forbesii*) and southern mixed
15 chaparral, often on meta-volcanic soils. The chaparral that the flannelbush
16 occupies has dense shrub cover of moderate height characterized by
17 *Adenostoma fasciculatum*, *Ceanothus* sp., *Rhamnus ilicifolia*, *Arctostaphylos* sp.,
18 *Quercus berberidifolia*, *Rhus ovata*, *Malosma laurina*, *Heteromeles arbutifolia*,
19 *Eriogonum fasciculatum*, and *Salvia mellifera*.

20 **Threats:** Urban and agricultural development.

21 U.S. Fish and Wildlife Service. 1995. "Endangered and threatened wildlife and
22 plants; proposed endangered and threatened status for four chaparral plants
23 from southwestern California and northwestern Baja California, Mexico." *Federal*
24 *Register* 60: 51443–51452.

Otay Mesa mint (*Pogogyne nudiuscula*)

Otay Mesa mint was listed as endangered on August 3, 1993.

Distribution: Currently, the Otay Mesa mint is known to occur only in seven vernal pool complexes on Otay Mesa located on the Mexican border in San Diego County, California.

Natural History:

Morphology: The Otay Mesa mint is an annual herb of the mint family that reaches 30 centimeters or more in height and blooms from May through early June. The vegetative and floral portions give off a strong, turpentine mint odor. The flowers are purple with a white throat, with six flowers per stem node.

Habitat: The Otay Mesa mint is an endemic species of vernal pools of Otay Mesa in Southern California. Vernal pools are seasonal depressional wetlands where the proliferation of flora and fauna may be related to the Mediterranean climate that prevails throughout their range.

Threats: Urban and agricultural development, livestock grazing, off-road vehicle use, trampling, and invasions of non-native plants.

U.S. Fish and Wildlife Service. 1998. *Vernal Pools of Southern California Recovery Plan*. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

Otay tarplant (*Deinandra conjugens*)

The Otay tarplant was listed as threatened on October 13, 1998.

Distribution: The Otay tarplant is an endemic species of southwestern California with one population near the U.S. border in Baja California, Mexico. Within California, all known populations exist in San Diego County near Otay Mesa. Five populations contain 98 percent of all recorded plants: Rancho San Miguel, Rice Canyon, Dennery Canyon, Poggi Canyon, and Proctor Valley.

Natural History:

Morphology: The Otay tarplant is a glandular, aromatic annual plant of the aster family. It has a branching stem that ranges from 5 to 25 centimeters in height, with deep green or gray-green leaves covered in hairs. The flowers are yellow and composed of 8–10 ray flowers and 13–21 disk flowers. The Otay tarplant is self-incompatible and must be pollinated by a different plant.

Habitat: The Otay tarplant is restricted to clay soils, subsoils, or lenses. Historically, the Otay tarplant occupied areas vegetated with native grassland, open coastal sage scrub, and maritime succulent scrub. Currently, it occupies those communities, but is also found on the margins of disturbed sites and cultivated fields. Species commonly found with the tarplant include *Nassella* spp., *Bloomeria crocea*, *Dichelostemma pulchella*, *Chlorogalum* spp., *Bromus* spp., *Avena* spp., *Deinandra fasciculata*, *Lasthenia californica*, *Artemisia californica*, *Eriogonum fasciculatum*, *Lotus scoparius*, *Salvia* spp., *Mimulus aurantiacus*, *Malacothamnus fasciculatum*, *Malosma laurina*, *Rhus ovata*, *R. integrifolia*, *Lycium* spp., *Euphorbia misera*, *Simmondsia chinensis*, *Opuntia* spp., *Ferocactus viridescens*, *Ambrosia chenopodiifolia*, and *Dudleya* spp.

Threats: Urban and agricultural development and invasion of non-native species.

U.S. Fish and Wildlife Service. 2004. *Recovery plan for Deinandra conjugens* (Otay tarplant). Portland, Oregon. vii + 65 pp.

1 **Quino checkerspot butterfly (*Euphydryas editha quino*)**

2
3 The Quino checkerspot butterfly was listed as endangered on January 16, 1997.

4 **Distribution:** The historic distribution of the Quino checkerspot butterfly included
5 coastal California south of Ventura County and inland valleys south of the
6 Tehachapi Mountains. However, approximately 75 percent of the Quino
7 checkerspot butterfly's historic range has been lost, and it is currently only found
8 in western Riverside County, southern San Diego County, and northern Baja
9 California, Mexico.

10 **Natural History:**

11 *Habitat:* The Quino Checkerspot butterfly is found in several plant communities,
12 from scrub on coastal bluffs, coastal sage, chaparral, and oak woodlands to
13 desert pinyon-juniper woodlands. However, it is only found in openings within
14 these plant communities having a sufficient cover of larval food plants and annual
15 forbs that provide nectar for adults.

16 *Breeding:* Adults are flying from late February to April. Females lay egg masses
17 consisting of 120–180 eggs that hatch in 7–10 days. Total egg production ranges
18 from 400 to 800 eggs per female. Prediapause larvae undergo two or three molts
19 before entering diapauses as a third or fourth instar larvae. Prediapause larvae
20 are communal, while postdiapause larvae are solitary. Diapause breaks after
21 sufficient rain falls to establish food plants. The postdiapause larvae progress
22 through three to seven more instars before they pupate among low plants or
23 under rocks. Adults emerge in about 10 days.

24 *Diet:* Larvae feed on dwarf plantain (*Plantago erecta*) and purple owl's clover
25 (*Castilleja exserta*), White snapdragon (*Antirrhinum coulterianum*), woolly
26 plantain (*Plantago patagonica*), and bird's beak (*Cordylanthus rigidus*).

27 **Threats:** This species is threatened by agricultural and urban development and
28 other land use changes, habitat fragmentation, invasive non-native plant species,
29 and disrupted fire regimes.

30 Mattoni, R., G.F. Pratt, T.R. Longcore, J.F. Emmel, and J.N. George. 1997. "The
31 endangered quino checkerspot butterfly, *Euphydryas editha quino* (Lepidoptera:
32 Nymphalidae)." *Journal of Research on Lepidoptera*. 34:99–118.

33

Riverside fairy shrimp (*Streptocephalus woottoni*)

The Riverside fairy shrimp was listed as endangered on August 3, 1993.

Distribution: Originally thought to be restricted to five vernal pools in a 13-by-7-kilometer area of Western Riverside County. Additional locations now include vernal pools in Los Angeles, Orange, Ventura, and San Diego counties. Total range for this species is now considered to extend from coastal Southern California, south to northwestern Baja California, Mexico.

Natural History:

Habitat: The Riverside fairy shrimp is found in seasonal pools filled by spring and winter rains. These vernal pools are generally located in earth slump basins or tectonic swales in grasslands and agricultural areas interspersed with coastal sage scrub. Minimum habitat size was 750 square meters at the original five sites, with a minimum water depth of 30 centimeters at maximum pool filling. The Riverside fairy shrimp can be found in turbid or clear water, in partially vegetated pools, and has been found to co-occur with the Versatile fairy shrimp (*Branchinecta lindahli*). The Riverside fairy shrimp is found in deeper water around loose emergent vegetation. This species appears late in the season and is considered a warm-water species.

Breeding: The Riverside fairy shrimp has a seasonal cycle that varies with the water level and water temperature. Mature individuals were not found until late March in type localities. Hatching of cysts has been observed from January to March, and early or late season rains may expand the hatching period. Riverside fairy shrimp mature in 48 to 56 days, depending on a variety of environmental factors. Cysts can survive extreme temperatures and extended dry periods. Not all eggs hatch during pool-filling events, creating an egg structure in the egg bank that is key to species persistence.

Diet: Adults feed on detritus and small invertebrates.

Threats: Agricultural and urban development.

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: November 30, 2007).

San Diego ambrosia (*Ambrosia pumila*)

The San Diego ambrosia was listed as endangered on August 3, 1993.

Distribution: The San Diego ambrosia is an endemic species of San Diego and Riverside Counties, California. 12 of the 15 known populations reside in San Diego County. The populations are found in the watersheds of the San Diego, San Luis Rey, Sweetwater, and San Dieguito Rivers. Populations have also been observed in Baja California, Mexico.

Natural History:

Morphology: The San Diego ambrosia is a herbaceous perennial plant that spreads vegetatively by means of slender, underground rhizome-like roots from which aerial stems arise. The stems are 5–30 centimeters in height and are densely covered with short hairs. The leaves are two to four times pinnately divided and are covered with gray-white, appressed hairs. The ambrosia flowers from May through October.

Habitat: San Diego ambrosia primarily occupies the upper terraces of rivers and drainages, as well as open grasslands, openings in coastal sage scrub, and occasionally in the areas adjacent to vernal pools. Species found near the San Diego ambrosia include *Distichlis spicata*, *Baccharis salicifolia*, *Baccharis sarathroides*, *Eriogonum fasciculatum*, and *Eremocarpus setigerus*.

Threats: Urban and agricultural development.

U.S. Fish and Wildlife Service. 2002. "Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for *Ambrosia Pumila* (San Diego Ambrosia) From Southern California." *Federal Register* 67: 44372–44382.

1 **San Diego button-celery (*Eryngium aristulatum* var. *parishii*)**

2
3 San Diego button-celery was listed as endangered on August 3, 1993.

4 **Distribution:** The San Diego button-celery's range extends from Santa Rosa
5 Plateau in Riverside County, California, to the mesas north of Ensenada, Mesa
6 de Colonet, and San Quintin in Baja California, Mexico. In San Diego County, it is
7 found on Otay Mesa, near lower Otay Reservoir, and in Proctor Valley.

8 **Natural History:**

9 *Morphology:* The San Diego button-celery is a perennial herb with a persistent
10 tap root that is a member of the carrot family. It has a spreading to erect habit
11 and reaches heights of 41 centimeters or more. The stems and toothed leaves
12 are gray-green with spinose lobes. The flowers form on short peduncles with few
13 to many heads.

14 *Habitat:* The San Diego button-celery is an endemic species of vernal pools of
15 Southern California and northern Mexico. Vernal pools are seasonal
16 depressional wetlands where the proliferation of flora and fauna may be related
17 to the Mediterranean climate that prevails throughout their range.

18 **Threats:** Urban and agricultural development.

19 U.S. Fish and Wildlife Service. 1998. *Vernal Pools of Southern California*
20 *Recovery Plan*. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

21

1 **San Diego fairy shrimp (*Branchinecta sandiegonensis*)**

2
3 The San Diego fairy shrimp was listed as endangered on February 3, 1997.

4 **Distribution:** San Diego fairy shrimp are found in vernal pools from San Marcos
5 and Ramona south to Otay Mesa and northwestern Baja California. Also found
6 recently in shallow vernal pools in Orange County.

7 **Natural History:**

8 *Habitat:* The San Diego fairy shrimp is a vernal pool habitat specialist. It prefers
9 smaller, shallower vernal pools and ephemeral basins, generally less than 30
10 centimeters deep and often on chaparral-covered mesas.

11 *Breeding:* Adult San Diego fairy shrimp are observed from January to March, but
12 the hatching period may vary with the winter rains. They hatch and mature in 7 to
13 14 days, depending on water temperature. Eggs may be dropped to the pool
14 bottom or retained in the female's brood sack until she dies and settles. The eggs
15 or "cysts" can survive extended dry periods and high temperatures as they wait
16 for the vernal pool to fill again. Not all eggs hatch during a pool filling event,
17 resulting in an egg bank consisting of eggs from several breeding seasons. This
18 age structuring within the egg bank is important for population persistence in
19 unpredictably favorable or unfavorable environmental conditions.

20 *Diet:* The San Diego fairy shrimp is believed to feed on protozoa, rotifers,
21 bacteria, and organic matter.

22 **Threats:** This species is threatened by habitat loss through urbanization and the
23 conversion of habitat to agriculture.

24 NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web
25 application]. Version 6.2. NatureServe, Arlington, Virginia. Available
26 <http://www.natureserve.org/explorer>. (Accessed: November 30, 2007).
27

1 **Southwestern willow flycatcher (*Empidonax trailii extimus*)**

2
3 The southwestern willow flycatcher was listed as endangered on February 27,
4 1995.

5 **Distribution:** Breeding range extends from Southern California north to
6 Independence, AZ, southwestern New Mexico, and southern Utah, and formerly
7 southern Nevada. Migrates to winter ranges in central Mexico to northwestern
8 Colombia. Migration occurs through the desert regions in Southern California and
9 sometimes along the coast and onto the Channel Islands.

10 **Natural History:**

11 *Habitat:* Present in California from late April to September and can be found in
12 thickets, scrubby and brushy areas, open secondary growth, swamps, and open
13 woodlands. They are also known to nest in tamarisk (*Tamarix* sp.) thickets.

14 *Breeding:* Nesting occurs in June through late July, with nests constructed in a
15 fork or horizontal limb of a small tree, vine, or shrub, 2 to 3 meters high in dense
16 vegetation. Three to 4 eggs are laid per clutch and hatch after 12 to 15 days.
17 Incubation is conducted by the female, and chicks are tended by both parents.
18 Fledging occurs after 12 to 15 days, generally in early to mid July. A pair will
19 typically raise one brood per year.

20 *Diet:* Eats primarily insects caught on the wing, but will glean prey from foliage.
21 They occasionally will also consume berries. In the breeding range, they forage
22 within and sometimes above dense riparian vegetation.

23 **Threats:** This species is threatened by the loss and degradation of cottonwood-
24 willow and structurally similar riparian habitats. Increased irrigated agriculture
25 and livestock grazing have aided Brown-headed cowbird populations that in turn
26 impact the southwestern willow flycatcher. The current population exists in small,
27 fragmented populations, which increases the risk of local extirpation.

28 NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web
29 application]. Version 6.2. NatureServe, Arlington, Virginia. Available
30 <http://www.natureserve.org/explorer>. (Accessed: November 30, 2007).
31

Spreading navarretia (*Navarretia fossalis*)

Spreading navarretia was listed as threatened on December 15, 1994.

Distribution: Spreading navarretia is distributed from western Riverside County through coastal San Diego County, California, to northwestern Baja California, Mexico. The majority of species in the United States occur on Otay Mesa in San Diego County and along the San Jacinto River and near Hemet in Riverside County.

Natural History:

Morphology: Spreading navarretia is a low, mostly spreading or ascending annual herb that is 10–15 centimeters tall. The leaves are soft and finely divided, and become spine-tipped when dry. The flowers are white to lavender and are arranged in flat-topped, compact, leafy heads.

Habitat: Spreading navarretia is an endemic species of vernal pools in Southern California. It occasionally occupies ditches and depressions that are the result of degraded vernal pool habitat.

Threats: Urban and agricultural development.

U.S. Fish and Wildlife Service. 1994. Endangered and threatened wildlife and plants; proposed rule to list four southwestern California plants as endangered or threatened. *Federal Register* 59: 64812–624823.

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APPENDIX I

Draft Cultural Resources Survey Report



DRAFT

**CULTURAL RESOURCES SURVEY
SUPPORTING THE
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
PROPOSED CONSTRUCTION, OPERATION, AND
MAINTENANCE OF TACTICAL INFRASTRUCTURE
U.S. BORDER PATROL SAN DIEGO SECTOR,
CALIFORNIA**

Prepared for:

U.S. Customs and Border Patrol

Prepared by:



NOVEMBER 2007

ABBREVIATIONS AND ACRONYMS

APE	Area of Potential Effect
ARMR	Archaeological Resource Management Reports
ARPA	Archaeological Resources Protection Act
BLM	Bureau of Land Management
CBP	U.S. Customs and Border Protection
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHSC	California Health and Safety Code
cm	centimeter
CRHR	California Register of Historical Resources
CRTP	Cultural Resources Treatment Plan
CSHPO	State Historic Preservation Office
DHS	U.S. Department of Homeland Security
DPR	Department of Parks and Recreation (archaeological site form)
e ² M	engineering-environmental Management, Inc.
GPS	Global Positioning System
m	meter
NADB	National Archaeological Database
NAGPRA	Native American Graves Protection and Repatriation Act
NHPA	National Historic Preservation Act
OMW	Otay Mountain Wilderness
OWA	Otay Wilderness Area
PRC	Public Resources Code
SBI	Secure Border Initiative
TCP	Traditional Cultural Property
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

Report Author: Dayle M. Cheever, Judy A. Berryman, and Jim Whitaker

Consulting Firm: engineering-environmental Management, Inc. (e²M)

Report Date: November 2007

Report Title: Cultural Resources Survey Supporting the Environmental Impact Statement for the Proposed Construction, Operation, and Maintenance of Tactical Infrastructure U.S. Border Patrol San Diego Sector, California

Submitted to: U.S. Army Corps of Engineers, Fort Worth

Contract Number: DACA63-03-D-0009

USGS Quadrangle Maps: Otay Mountain and Tecate USGS 7.5 Quads

Acreage: Linear proposed project corridor: approximately 5 miles by 300 feet

Keywords: Southern California, Prehistoric, Historic, Linear Survey, Positive, Flaked Stone Artifacts, Disturbed, International Boundary, Pack Trail, Traditional Cultural Property, Kuchumaa, Tecate Peak

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EXECUTIVE SUMMARY

This report presents the cultural resources management activities conducted in support of the Environmental Impact Statement addressing the proposed construction, operation, and maintenance of approximately 5 miles of tactical infrastructure in San Diego County, California for the U.S. Border Patrol (USBP) San Diego Sector of the U.S. Customs and Border Protection (CBP). The Area of Potential Effect (APE) for the proposed project includes lands owned or managed by the Bureau of Land Management (BLM) and private property. The results of cultural resources activities conducted in support of the proposed project are presented in accordance with the National Historic Preservation Act of 1966 - Section 106 and 36 Code of Federal Regulations (CFR) Part 800, Protection of Historic Properties, revised 2000. All cultural resources activities performed in support of the proposed project meet the requirements of the Archaeological Resources Protection Act (ARPA) of 1979, as amended (16 United States Code [U.S.C.] 470aa – 470mm), as defined in Section 36 CFR 60.4, and are presented in the format stipulated in *Archaeological Resource Management Reports (ARMR) Recommended Contents and Format* (California Office of Historic Preservation 2000). All engineering-environmental Management, Inc. (e²M) personnel performing cultural resources activities in support of the proposed project meet or exceed the requirements for professional education and experience as defined in 36 CFR Part 800 (National Historic Preservation Act [NHPA]), the Secretary of the Interior's Professional Qualifications Standards (Federal Register Notice, Vol. 48, No. 190, pp. 44738-44739, 1983), and ARPA standards (43 CFR Part 7).

USBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, patrol roads, and access roads along the U.S./Mexico international border in the San Diego Sector, Brown Field Station. The proposed tactical infrastructure would be constructed in two sections along the U.S./Mexico international border within USBP San Diego Sector, in San Diego County, California. Section A-1 is approximately 3.6 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The proposed section would be on and adjacent to the Otay Mountain Wilderness (OMW), would follow the Pack Trail, and would not connect to any existing fence. Section A-2 would be approximately 0.8 miles in length and would connect with existing border fence west of Tecate, California. This fence section would be an extension of an existing fence on Tecate Peak

There is one known traditional cultural property (TCP) in the Section A-2 proposed project corridor. The landform known as Tecate Peak or Kuchumaa has been identified as a TCP and is on the National Register of Historic Places (Register #92001268).

A letter initiating consultation with associated Native American groups was sent to 18 tribal groups with cultural links to the proposed project corridor by the U.S.

1 Army Corps of Engineers (USACE), Fort Worth District (see **Appendix A**). The
2 concerns of these groups is considered during the preparation of this document,
3 and information regarding resources of traditional, cultural, or religious
4 significance to Native American people has been considered as part of the
5 impact analysis.

6 Although the proposed project represents a potential impact on five cultural
7 resources sites for Section A-1 and one site on Section A-2, implementation of
8 the stated cultural resources management recommendations and protocols,
9 including archaeological monitoring and the development and implementation of
10 a CRTP for the treatment of any inadvertently discovered cultural resources,
11 would reduce potential project impacts on cultural resources to a level that is less
12 than significant.

13 The impacts on Kuchumaa have not been defined and the development of
14 protective measures has not been accomplished. Consultation with associated
15 tribal groups has been initiated and ongoing and additional consultation would be
16 necessary to arrive at appropriate project protocols. Additional information
17 regarding design and project limits should be developed to facilitate the
18 presentation of this project to concerned parties with respect to TCP issues.

1	DRAFT	
2	CULTURAL RESOURCES SURVEY SUPPORTING THE	
3	ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED CONSTRUCTION,	
4	OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE	
5	U.S. BORDER PATROL SAN DIEGO SECTOR, CALIFORNIA	
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1. INTRODUCTION

The U.S. Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP), U.S. Border Patrol proposes to construct, operate, and maintain approximately 5 miles of tactical infrastructure along the U.S./Mexico international border near the Otay Mountain Wilderness (OMW), San Diego County, California. Tactical infrastructure would consist of primary pedestrian fence, construction and patrol roads, and access roads in two sections along the U.S./Mexico international border within USBP's San Diego Sector. Proposed tactical infrastructure includes the installation of fence sections in areas of the border that are not currently fenced. The first section is approximately 3.6 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The second would be approximately 0.8 miles in length and would connect with existing border fence west of Tecate, California (see **Figure 1-1**). The proposed fence and tactical infrastructure could encroach on both public lands managed by the Bureau of Land Management (BLM) and privately owned land parcels.

The mission of CBP is to prevent terrorists and terrorist weapons from entering the United States, while also facilitating the flow of legitimate trade and travel. In supporting CBP's mission, USBP is charged with establishing and maintaining effective control of the border of the United States. USBP's mission strategy consists of the following five main objectives:

- Establish substantial probability of apprehending terrorists and their weapons as they attempt to enter illegally between the Ports of Entry (POEs)
- Deter illegal entries through improved enforcement
- Detect, apprehend, and deter smugglers of humans, drugs, and other contraband
- Leverage "smart border" technology to multiply the effect of enforcement personnel
- Reduce crime in border communities and consequently improve quality of life and economic vitality of targeted areas.

USBP has nine administrative sectors along the U.S./Mexico international border. USBP San Diego Sector is responsible for 7,000 square miles of Southern California and 66 miles of the U.S./Mexico international border. USBP San Diego Sector is responsible for the entire county of San Diego, California (CBP 2007).

The Brown Field Station has responsibility for approximately 11.5 miles of the border within USBP San Diego Sector. During the 2006 calendar year, the Brown Field Station was responsible for 46,213 apprehensions, or 34 percent of

1 all apprehensions within USBP San Diego Sector. The Brown Field Station is the
2 fifth busiest station (in terms of apprehensions) in USBP (CBP 2007).

3 Approximately half of the Brown Field Station area of responsibility has tactical
4 infrastructure in place. The region without infrastructure is rugged mountainous
5 terrain that is currently difficult to access and patrol. The majority of this
6 unsecured area is to the south of BLM's OMW and has become a focal point of
7 illegal immigrant traffic, where traffickers are well-funded and organized.

8 **Figure 1-1** illustrates the proposed location of the new tactical infrastructure
9 generally using the path known as the Pack Trail with access from the west along
10 an existing dirt road. Construction of other tactical infrastructure might be
11 required in the future as mission and operational requirements are continually
12 being reassessed. **Figure 1-2** provides the location of the west of Tecate section
13 and the proposed access route from the east.

14

1

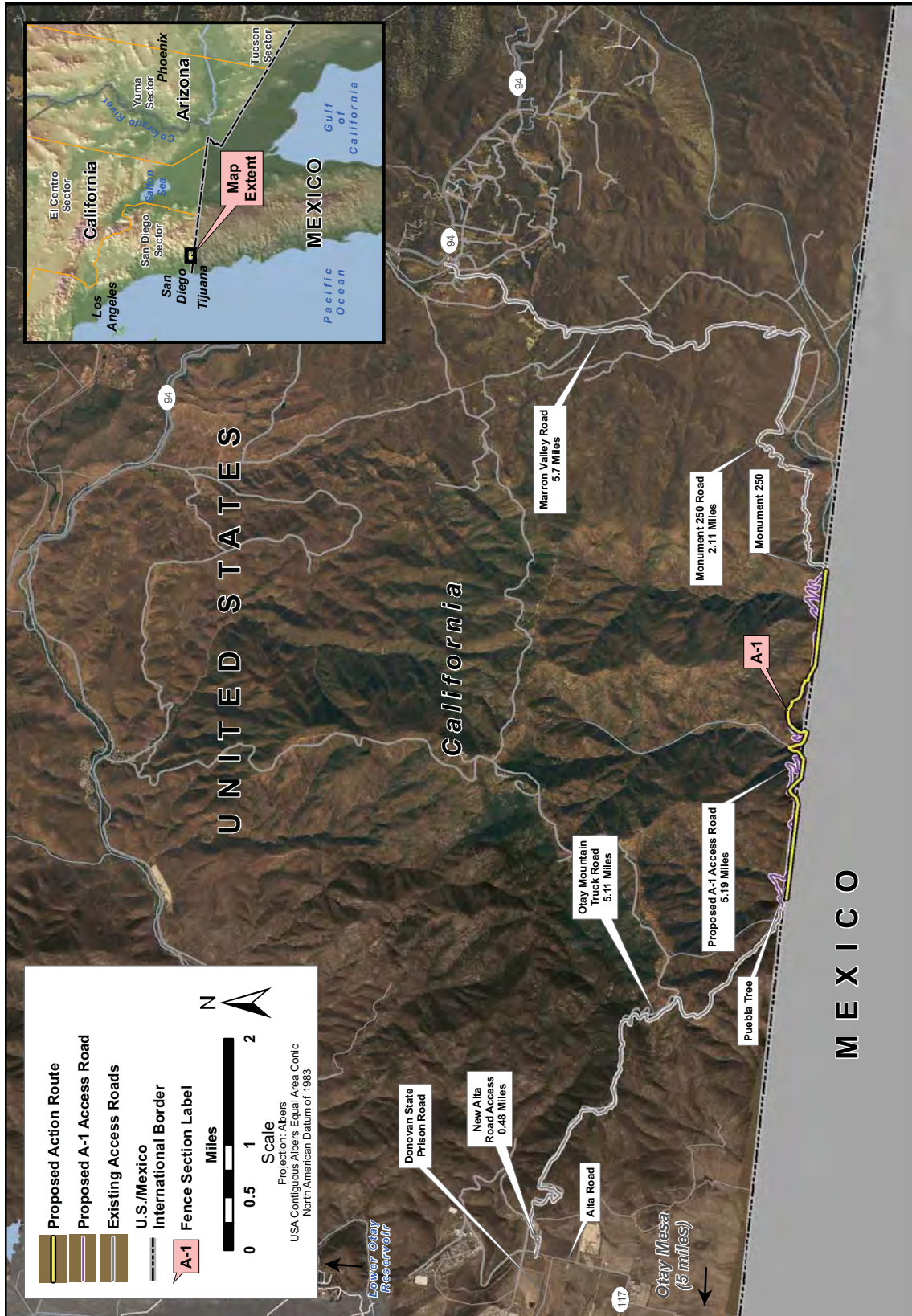


Figure 1-1. Section A-1 and Access Roads

Source: ESRI StreetMap USA 2005

2

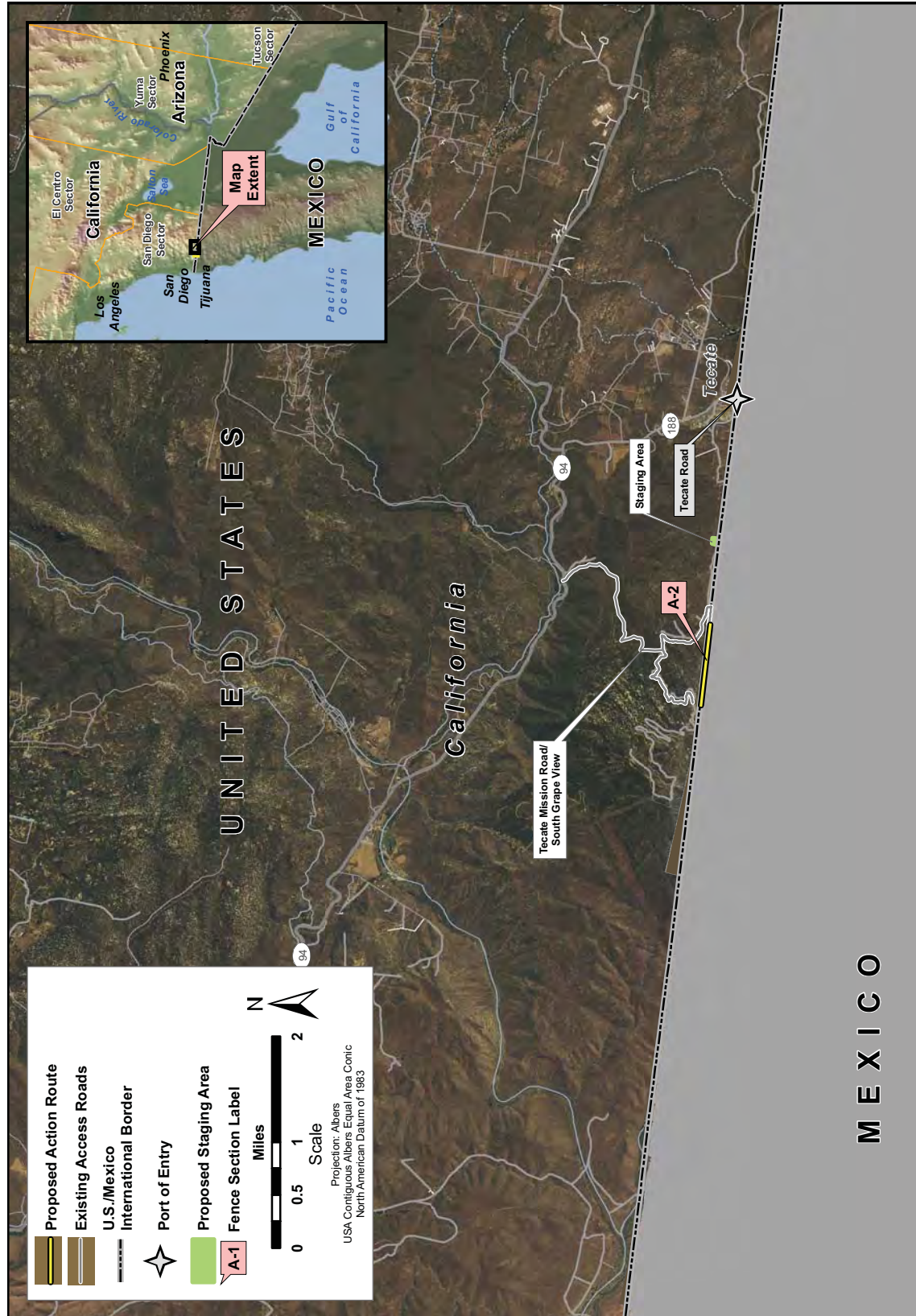


Figure 1-2 Section A-2 and Access Roads

2. SETTING

2.1 ENVIRONMENTAL SETTING

The proposed project corridor lies within the Peninsular Range province, a well-defined geologic and physiographic unit that occupies the southwestern corner of California, as well as the Baja California peninsula. This province is characterized by northwesterly trending ranges and valleys that abruptly terminate on the north at the east-west-oriented Transverse Ranges. A large part of the province is submerged beneath the Pacific Ocean where it is represented by several of the southern Channel Islands. The rocks of the Peninsular Range province consist of a range of sedimentary, volcanic, and metamorphic rock types. The sedimentary strata are highly clastic, containing a wide range of rock inclusions. Volcanic rocks include the Santiago Peak volcanics and rocks of the southern California batholith, among others.

This topographic diversity is also reflected in the biological communities present. Vegetation in the project vicinity is varied, reflecting a complex interaction of soils, geology, topography, and hydrology. Plants typical of the coastal sage scrub and chaparral plant communities blanket many of the slopes, whereas riparian species grow along the floors of the larger drainage channels. These plant communities provide habitat for a range of small- to medium-sized animals.

Natural habitats in the project vicinity have undergone significant alteration as a result of modern encroachment. Livestock grazing and other agricultural activities have altered the native plant communities. Quarrying and other mining activities, as well as modern development have disturbed large areas. Extensive areas of native landscape remain in the more rugged portions of the project vicinity.

2.2 ETHNOGRAPHIC BACKGROUND

The proposed project corridor is in the southern portion of San Diego County within the historical territory of the Kumeyaay people. Kumeyaay is a native term referring to all Yuman-speaking peoples living in the region from the San Dieguito River south to the Sierra Juarez in Baja California and roughly west of present-day Salton Sea. Prior to European contact, Kumeyaay territory might have extended as far north as the San Luis Rey River. To the north of the Kumeyaay live the Takic-speaking Luiseño and Cahuilla. To the east and south are other peoples who speak a variety of distinct languages belonging to the Yuman language family.

The Kumeyaay have been referred to by a confusing array of names. The standard practice during the Spanish colonial era in California was to name all native peoples within the sphere of influence of a particular mission district after that mission; hence, the native people living around mission San Diego de Alcalá came to be known as Diegueño. Because this nomenclature generally ignored traditional sociopolitical divisions, anthropologists later began to apply the terms Tipai and Ipai to distinguish between two culturally and linguistically distinct

1 groups. More recent ethnographic data and historic records indicate that the
2 native people refer to themselves as Kumeyaay, and this is now the most widely
3 accepted name.

4 On the basis of linguistic and archaeological evidence, it has been suggested
5 that the ancestors of the present-day Kumeyaay arrived in this part of California
6 sometime between 1000 B.C. and A.D. 1000. Adding new cultural traditions to
7 earlier patterns, the ancestral Kumeyaay seem to have assimilated with the
8 earlier human inhabitants rather than displacing them.

9 The Kumeyaay were organized sociopolitically into autonomous bands, each
10 controlling an area measuring approximately 10 to 30 miles, around a water
11 source, typically a perennial drainage or occasionally a spring (Shipek 1982).
12 Each band usually occupied a main village and several satellite living areas.
13 These settlements were temporary, as the community would fission seasonally
14 into smaller groups, which would establish camps to gather, process, and cache
15 seasonally available resources. Seasonal movements were geared toward
16 following the ripening of major plants dispersed from canyon floor to the higher
17 mountain slopes. During the winter months, a band would typically aggregate
18 back to the main village.

19 The complexity of Kumeyaay residential structures varied according to locality
20 and need. In summer camps, for instance, a windbreak or rock-shelter might be
21 sufficient protection from the elements. In winter, however, more substantial
22 structures might be needed, in which case the Kumeyaay built a thatch-covered
23 dome or gable house.

24 Leadership of each band was invested in a clan chief and at least one assistant.
25 Positions were generally inherited, although a chief could be selected by
26 consensus. Chiefs typically derived their authority through strength of personality
27 and social skills rather than by force, as they had no real coercive powers. The
28 duties of the chief included resolving disputes, advising about marriages,
29 appointing leaders for important gathering expeditions, and directing clan and
30 interclan ceremonies.

31 The Kumeyaay practiced a fairly typical California hunting and gathering
32 subsistence regime based on a variety of locally abundant terrestrial and aquatic
33 resources. The Kumeyaay diet was heavily dependent on harvesting wild plant
34 foods, with a strong emphasis on acorns and pinion. An abundance of other plant
35 food, including many different kinds of seeds, bulbs, and other plants, rounded
36 out the diet. Meat was procured through hunting of small game, including rabbits,
37 squirrels, and various reptiles. Many of these animals were captured with nets or
38 by hand. Larger game, such as deer, was taken with bow and arrow, but
39 probably did not figure prominently in the diet. Besides abundant plants, the
40 inhabitants living in the coastal zone had access to rich marine environments,
41 which provided abundant shellfish, fish, and sea birds and sea mammals.

1 Interaction with neighboring tribes was maintained through extensive trade
2 networks involving the movement of goods and information across diverse
3 ecological zones. The San Diego-area Kumeyaay appear to have maintained
4 stronger trade relationships with their neighbors to the east than with groups to
5 the north and south, as evidenced by a lively trade between the seacoast and
6 inland areas as far east as the Colorado River (Luomala 1978). Acorns, dried
7 seafood, ornamental marine shell, and other materials moved eastward from the
8 coast and uplands, and salt, gourd seeds, and mesquite beans moved in the
9 opposite direction.

10 Contact between the Kumeyaay and Europeans began in 1542 when Juan
11 Rodríguez Cabrillo landed the first Spanish expedition in San Diego. Sustained
12 cultural interaction did not develop, however, until the founding of Mission San
13 Diego de Alcalá in 1769. Although the Kumeyaay culture was not as severely
14 impacted by Spanish colonization as some other California tribes, its
15 sociopolitical structure was drastically disrupted during the Mission period and
16 later. Those Kumeyaay living closest to the mission were hardest hit by
17 European civilization, whereas groups living in the mountains were less
18 traumatized by cultural interaction and preserved more of their culture longer.

19 By the end of the 19th century, most Kumeyaay had been disenfranchised from
20 their lands and relegated either to reservations or, in some cases, acculturated
21 into mainstream Euro-american society in rural areas or at the edges of small
22 towns on land that immigrants did not want. Employment opportunities were few.
23 Most were poorly paid and labored in mines, on ranches, or in town, although
24 some still supplemented their income with traditional subsistence activities
25 (Chartkoff and Chartkoff 1984).

26 Throughout the 20th century, the Kumeyaay have struggled and worked toward
27 maintaining their autonomy and sovereignty. Today their culture is thriving and
28 the Kumeyaay are represented by federally recognized tribes with reservations
29 throughout San Diego County. At present, about 20,000 Kumeyaay descendants
30 live in San Diego County, with approximately 10 percent of the total population
31 living on the 18 established Kumeyaay reservations.

32 **2.2.1 Prehistoric Background**

33 Southern San Diego County contains archaeological evidence of human use and
34 occupation that spans thousands of years of prehistory. The earliest sites date to
35 the early Holocene (9,000–7,500 years ago) and are known as the San Dieguito
36 complex, so-named because the culture was first defined through the
37 investigation of a site along the San Dieguito River, about 30 miles north of the
38 current proposed project corridor. The archaeological remains of this period
39 consist of large, stemmed projectile points and finely made scraping and
40 chopping tools, which were used for hunting and processing large game animals
41 (Moratto 1984). San Dieguito stone tools generally exhibit a high degree of
42 workmanship and careful raw material selection. Leaf-shaped blades,
43 occasionally with wide-stemmed hafting elements, are common point or knife

1 forms in this material culture. The hafting and delivery systems associated with
2 these artifacts are widely debated but probably included hardened foreshafts
3 fastened to atlatl darts and lances. Bows might have been used, but the mass
4 (weight) of many of the projectiles associated with this cultural tradition implies
5 that it was rare, if in fact present at all.

6 The La Jolla complex (i.e., 7,500–2,000 years ago) followed the San Dieguito
7 complex. La Jolla Period sites are recognized by the presence of abundant
8 milling stone implements and shell middens near lagoons and sloughs. This
9 period brought a shift from hunting to a more generalized subsistence strategy
10 relying on a broader range of resources, including plant, shellfish, and small
11 game. During this period, the number of sites increased from the earlier San
12 Dieguito, and sites are found across a greater range of environmental zones.

13 In addition to the presence of ground stone tools, La Jolla period sites are
14 typically associated with flexed human burials with grave offerings and shell
15 middens. Occasionally cog stones and discoids are found in these
16 assemblages. The flaked stone assemblages from these sites generally contain
17 higher percentages of battering and crushing implements, with less emphasis on
18 tools with a finely worked cutting edge, and collections with significantly lower
19 percentages of large bifacially worked knives and unifacially worked
20 scraper/cores.

21 The origin of the La Jolla cultural complex is unclear. Some researchers believe
22 that it developed out of the earlier San Dieguito complex, whereas others feel
23 that it might have coexisted with the San Dieguito, and merely represents use of
24 distinct environments by the same culture. Regardless of the origins, the
25 archaeological remains of these two complexes indicate very different
26 subsistence strategies, with the San Dieguito complex focusing on hunting and
27 the La Jolla complex based on a broader-based foraging strategy. Regional
28 variants of the San Dieguito and La Jolla complexes are found in interior regions
29 of San Diego County. The Pauma complex, originally believed to be a distinct
30 archaeological culture, is more likely a regional variant of the better-known La
31 Jolla complex.

32 As elsewhere during the late prehistory in southern California, the Yuman
33 complex (i.e., 1,300–200 years ago) or Late Period was a time of cultural
34 transformation. Beginning about 1,000 years ago, Yuman-speaking groups
35 moved into the San Diego area. These later populations are identified by
36 distinctive, small projectile points, ceramic vessels, and an increase in the use of
37 mortars. The acorn became an increasingly important component of the diet,
38 although subsistence pursuits from earlier periods continued.

39 Although there are differences in the settlement patterns noted for each
40 successive prehistoric period, habitation sites from all periods are most
41 commonly found near lagoons and the open coast, or along inland valley stream-
42 channels and rivers. The study area is within a semi-arid climate with a distinct
43 seasonal pattern to rain and relatively few reliable sources of potable water. In

1 general, the coastal zone and mouth of canyons or the confluence of streams are
2 considered to be archaeologically sensitive and the most likely places to support
3 archaeological sites ranging from small activity areas to habitation sites. Smaller
4 special-use or satellite sites are found scattered across all environmental zones,
5 particularly near water sources. Extensive prehistoric quarries are known from
6 the general region, and milling features on bedrock outcrops are common in the
7 inland portions of the county.

8 **2.2.2 Historic Background**

9 The historic period began in the San Diego area with the voyage of Juan
10 Rodríguez Cabrillo, who landed near Point Loma on September 28, 1542.
11 Although several expeditions were later sent to explore the Alta California coast,
12 for nearly two centuries following Cabrillo's voyage the Spanish government
13 showed little interest in the region, focusing instead on the Mexican mainland and
14 on Baja California. In the 1760s, however, spurred on by the threat to Spanish
15 holdings in Alta California by southward expansion of the Russian sphere of
16 influence, the Spanish government began planning for the colonization of Alta
17 California (Rolle 1978).

18 The Spanish originally planned to establish their first settlement in Alta California
19 at San Diego using a four-pronged expedition. Two groups would arrive by sea
20 and two over land. The various expeditions departed from their respective
21 locations throughout the first half of 1769. The two ships and both overland
22 parties eventually reached San Diego. A third supply ship was dispatched to join
23 the expedition, but it was apparently lost at sea. Meeting in San Diego, the
24 colonists succeeded in establishing Mission San Diego de Alcalá on July 16,
25 1769 at the present-day location of Presidio Park. The Mission was moved inland
26 to its present location after the original setting proved unsatisfactory. The
27 Presidio remained on the hillside overlooking present-day Old Town and the
28 mouth of the San Diego River and gradually fell to disrepair.

29 For the next 50 years, mission influence grew in southern California: Mission San
30 Luis Rey de Francia, north of San Diego in present-day Oceanside, was
31 established on June 13, 1798 (James 1912), and the assistance of Santa Ysabel
32 and a dam and flume in Mission Gorge constructed around 1818 (Collett and
33 Cheever 2002, Luomala 1978). The mission economy was based on farming and
34 open-range ranching over vast expanses of territory.

35 As part of their colonization goals, the church hierarchy felt an obligation to
36 convert the native people to Christianity, and the church worked diligently at
37 converting the local populations. The mission priests gathered as many
38 Kumeyaay into the mission as possible. Once there, the neophytes essentially
39 were held captive while they received religious instructions and provided free
40 labor for the mission, often forcibly. The effects of mission influence upon the
41 local native population were devastating. The reorganization of their traditional
42 lifestyle alienated them from their previous subsistence patterns and social

1 customs. European diseases for which the Kumeyaay had no immunities
2 reached epidemic proportions and many died.

3 Mexican independence from Spain in 1821 was followed by secularization of the
4 California missions in 1832. Between 1833 and 1845, the newly formed Mexican
5 government began to divide up the immense church holdings into land grants. By
6 the 1840s, ranches, farms, and dairies were being established throughout the El
7 Cajon Valley, along the Sweetwater River, and in nearby areas.

8 The rancho era in California was short-lived and in 1848 Mexico ceded California
9 to the United States under the Treaty of Guadalupe Hidalgo. Growth of the region
10 was comparatively rapid after succession. Subsequent gold rushes, land booms,
11 and transportation development all played a part in attracting settlers to the area.
12 San Diego County was created in 1850, the same year that the City of San Diego
13 was incorporated. Over the next 20 years the county's population increased six-
14 fold and the city population more than tripled. By the late 1800s, the county was
15 still growing and a number of outlying communities developed around the old
16 ranchos and land grants, in particular, areas in the southern limits of the county
17 (Collett and Cheever 2002).

18 Throughout the early 20th century most of San Diego County remained rural.
19 Like most of southern California, this region changed rapidly following World War
20 II when the pace of migration and growth quickened. Today, southern San Diego
21 County has transformed into a burgeoning metropolis with unprecedented urban
22 expansion.

23 The remoteness of the proposed project corridor has resulted in a generally
24 undeveloped appearance with the exception of access roads, heavily used
25 footpaths, and the accumulation of modern trash.

26

3. METHODS

3.1 RECORD SEARCH AND ARCHIVAL RESEARCH

An archaeological site record and archival search was conducted at the South Coastal Information Center in accord with the requirements of the National Historic Preservation Act (NHPA) Section 106 (Code of Federal Regulations [CFR] 800.4 [2, 3, and 4]). The archaeological site record and archival search were completed to identify and collect data related to cultural resources sites and isolates recorded within a 0.5-mile radius of the proposed project corridor of Potential Effect (APE) as shown on **Figures 1-1** and **1-2**. Pertinent site records were identified and collected and supporting cultural resources management reports were collected, reviewed, and evaluated. A search of the National Archaeological DataBase (NADB) was also completed in an effort to identify cultural resources management reports for previously completed cultural resources management activities (archaeological survey or evaluation excavations) in the study area and in the immediate vicinity. The National Register of Historic Places was reviewed for information on properties that are or have the potential to be listed.

A letter initiating consultation with local Native American groups was sent by the U.S. Army Corps of Engineers (USACE), Fort Worth District to 14 tribal groups with cultural links to the proposed project corridor (see **Appendix A**). This letter was prepared to initiate consultation and comment on TCPs and areas of concern to these affiliated groups. The concerns of these groups were considered during the preparation of this document and information regarding resources of traditional, religious, or cultural significance to Native American tribes will be considered throughout the planning process.

3.2 FIELD WORK

An intensive pedestrian survey of the entire project alignment was completed in November 2007 by archaeologists from engineering-environmental Management, Inc. (e²M). The survey was designed as a pedestrian coverage with transects spaced at an interval that did not exceed 15 meters between team members. The area of survey was established as a corridor between the boundary of the OWA and the U.S./Mexico international border and included potential access routes. The area surveyed was larger than the area necessary to construct the proposed barrier and improve the existing trail to a drivable road as a designed project was not finalized at the time of the cultural resources survey. The proposed access route, barrier alignment, and construction-related corridors were determined prior to the survey and a buffer of 300 feet around the identified areas was surveyed.

The alignment and identified access and potential construction lay down and staging areas were examined for surface evidence of cultural resources sites, features, or isolated finds. Aerial and topographic maps were used for orientation and coverage guides and all discovered cultural resource sites, features, and

1 isolates were plotted in the field using a Trimble global positioning system (GPS)
2 field unit with submeter accuracy.

3 All of the locations of previously recorded sites or isolates within and in close
4 proximity to the proposed project corridor were revisited to determine the
5 accuracy of the original recording and to assess the current conditions. The
6 Universal Transverse Mercator (UTM) information was downloaded to the field
7 GPS and used to navigate to the recorded locations. The plotted locations on the
8 U.S. Geological Survey (USGS) site location maps were also employed as a
9 means of relocating previously recorded sites, as UTM data are not always 100
10 percent reliable.

11 Access to the proposed project corridor was gained through coordination with the
12 USBP San Diego Sector and the BLM, Palm Springs/Bakersfield Field Office
13 under a Fieldwork Authorization Permit. The survey team was escorted by a
14 representative of the USBP and the fieldwork was completed in October 2007
15 under Fieldwork Authorization Permit No. CA-08-03.

16 The conditions at the time of the survey were dry and ground surface visibility
17 was excellent. Vegetation in the area has burned in recent years, though there
18 are still areas of dense vegetation, in particular in the drainages. In addition to
19 the extensive and regular foot traffic, the Section A-1 proposed project corridor
20 demonstrates evidence of human and large domestic animal activity. Cattle and
21 horses from south of the border regularly graze the proposed project corridor and
22 modern trash in the form of paper, plastic water containers, and miscellaneous
23 personal items is scattered across the study area and in some areas is
24 particularly heavy. The establishment of the OWA has created a buffer to access
25 and development to the north; access from the south is not as restricted resulting
26 in notable evidence of human and domestic animal presence. The proposed
27 project corridor is extremely rugged and the topography is challenging with
28 relatively few areas that can be classified as flat or level.

29 Section A-2 burned in October 2007 and the proposed project corridor was
30 generally clear of vegetation. The access road is a well-established and well-
31 used dirt road that has sufficient width for one vehicle. This road is referred to as
32 Tecate Mission Road (also known as South Grape View). The area designated
33 for barrier placement is on the flanks of Tecate Peak and had recently burned
34 such that there was no vegetation masking the ground surface.

4. RECORD SEARCH RESULTS

A review of the archaeological site records and archival information, including site (CA-SDI) and Primary (P-37) plot USGS maps (Otay Mountain and Tecate, California quads) and the NADB, indicates that portions of the study areas and vicinity have been previously surveyed or subjected to archaeological excavation. Reports listed in the NADB documenting previously completed cultural resources management projects in and within the vicinity of the study area are summarized below. A review of the National Register provided information on one sacred site that is within the project vicinity. **Confidential Attachment 1** provides the results of the record search with site location information for Sections A-1 and A-2.

4.1 PREVIOUS STUDIES

There are records for seven cultural resources studies in the study area (**Confidential Attachment 1**). These work efforts include survey coverage of large areas associated with the Pack Trail also known as the Border Pack Trail.

The following reports are on file with the South Coastal Information Center for the proposed project corridor:

- Cultural Resources Report-Mission Park R&PP Application 1981
- Mission Park R&PP Application 1981
- Survey of the California Department of Forestry Evans-Wentz Property 1984
- Otay Mesa OHV Park Environmental Impact Report 1986
- Appendixes for the Environmental Impact Report for Otay Valley Water Reclamation Facility for the Clean Water Program for Greater San Diego 1990
- Historical and Architectural Assessment of Six Timber Box Flumes on the Delzura Conduit 1990
- National Register of Historic Places Registration for Kuchumaa (Tecate Peak) 1992
- National Register Application Form for Kuchumaa (Tecate Peak)
- Archaeological Survey for the Joint Task Force-Six Border Road Repair Project 1996
- A Cultural Resources Inventory of the Proposed Otay Mountain Horse Trail 1997
- Cultural Resource Survey: Tecate Trail and Puebla Tree Road 2002
- Final Cultural Resources Inventory of the Border Pack Trail, San Diego County, California 2002.

4.2 RECORDED SITE INFORMATION

The record search results indicate that there are four sites and five isolates recorded along the Pack Trail (see **Table 4-1**).

Table 4-1. Recorded Sites within the Project APE

Site Number	Section	Site Number	Section
CA-SDI-16368	A-1	P-37-015716	A-1
CA-SDI-16369	A-1	P-37-024688	A-1
CA-SDI-16370	A-1	P-37-024689	A-1
CA-SDI-16371	A-1	P-37-024691	A-1
P-37-015715	A-1		

Table 4-2 provides a summary of the recorded sites by project section within 0.5 miles of the project right-of-way. The site descriptions and recorders were derived from the site records.

Table 4-2. Recorded Sites by Section within 0.5 Miles of the Project

Site Number	Site Description	Reference and Date Recorded	Section
CA-SDI-190	Unknown	Alan Treganza Date Unknown	A-1
CA-SDI-9101	Sparse lithic scatter with bedrock milling	Pat Welch 1981	A-2
CA-SDI-9102	Sparse flaked lithic scatter	Pat Welch 1981	A-2
CA-SDI-9968	Extensive bedrock milling features with sparse flaked lithic scatter	Dan Foster and Rich Jenkins 1984	A-2
CA-SDI-16300	Lithic procurement and moderate flaked lithic scatter	Greig Parker 2002	A-1
CA-SDI-16368	Sparse flaked lithic scatter	Cary Cotterman and Maria Espinoza 2002	A-1
CA-SDI-16369	Small flaked lithic and prehistoric ceramic scatter	Cary Cotterman and Maria Espinoza 2002	A-1
CA-SDI-16370	Seasonal camp with two milling features and a sparse flaked lithic scatter	Cary Cotterman and Maria Espinoza 2002	A-1
CA-SDI-16371	Sparse flaked lithic scatter	Cary Cotterman and Maria Espinoza 2002	A-1
CA-SDI-16372	Dense flaked lithic scatter	Cary Cotterman and Maria Espinoza 2002	A-1

Site Number	Site Description	Reference and Date Recorded	Section
P-37-015715	Isolate-Interior dacite flake	Mike Mitchell 1997	A-1
P-37-015716	Border Pack Trail	Cary Cotterman and Maria Espinoza 2002	A-1
P-37-024688	Isolate-Dark gray basalt flake	Cary Cotterman and Maria Espinoza 2002	A-1
P-37-024689	Isolate- Light brown dacite core and light brown dacite flake	Cary Cotterman and Maria Espinoza 2002	A-1
P-37-024690	Isolate-Brown dacite flake	Cary Cotterman and Maria Espinoza 2002	A-1
P-37-024691	Isolate-Gray basaltic flake	Cary Cotterman and Maria Espinoza 2002	A-1

1

2 **Traditional Cultural Properties**

3 There is one known TCP in the proposed project corridor. The landform known
4 as Tecate Peak or Kuchumaa has been identified as a TCP and is on the
5 National Register of Historic Places (Register #92001268). The following is a
6 presentation of the importance and definition of this area as a TCP from the
7 *National Register Bulletin 38: Guidelines for Evaluating and Documenting*
8 *Traditional Cultural Properties*.

9 **Kuchumaa (Tecate Peak)**, Tecate, San Diego County, California,
10 is a sacred mountain to the Kumeyaay Indians of southern
11 California and northern Baja California, Mexico. Although there are
12 modern intrusions (a road and communications facilities on the
13 summit), the mountain is important to the Kumeyaay community's
14 belief system. The peak is a special place, marking the location for
15 the acquisition of knowledge and power by Kumeyaay shamans.
16 Oral tradition records the use of Kuchumaa as the place where
17 several important shamans instructed their initiates and the sacred
18 place of vision quests and purification ceremonies. Contemporary
19 Native Americans continue to use Kuchumaa during the full moon
20 and at equinoxes, when they pray for renewal of Earth Mother and
21 peace. Kuchumaa is significant under Criterion A for its association
22 with Native American cultural history. A contour line and a legal
23 boundary were used to define the National Register boundaries of
24 the property. **Verbal boundary description:** Kuchumaa is 3,885
25 feet above mean sea level. The nominated area includes all land
26 from the 3,000-foot contour level up to and including the peak. On
27 the north it drops abruptly to Highway 94. The western flank
28 consists of several dissected subpeaks and the eastern aspect is
29 an upland spine. The southern boundary conforms to the

1 international border [between the United States and Mexico]. This
2 is a total of 510 acres, 320 to the west and 190 to the east.
3 **Boundary justification:** Kuchumaa was and remains important to
4 southern California Native Americans as a structural unit. If the
5 mountain lacked its physical proportions and regional position, then
6 it is quite possible that the peak would not have been revered. The
7 physical stature of Kuchumaa constitutes one reason that it was
8 used as a place of spiritual learning and worship. During a visit to
9 Kuchumaa to evaluate a development proposal, Native Americans
10 identified a sphere of spiritual influence extending for several miles
11 from the mountain. This constitutes one zone of spirituality;
12 approachable by both Kwisiyai (shamans) and ordinary people.
13 Actual Native American use of Kuchumaa provides guidelines for
14 establishing boundaries. This nomination includes that portion of
15 the mountain located above an elevation of 3,000 feet above mean
16 sea level. According to current data, this area is considered
17 sacrosanct. In the ethnographic and prehistoric past, the summit
18 was used for arcane rituals and approached only by shamans and
19 their initiates. Cultural taboos prohibited common folk from
20 ascending beyond a spring known as God's Tear. The location of
21 God's Tear Spring has not been verified, but best estimates place it
22 as the spring located just above the 3,000-foot level. Finally,
23 according to Rosalie Pinto Roberston [granddaughter of the last
24 traditional chief of the Kumeyaay], the high mountain slopes hold
25 burials of cremated Kwisiyai. As with the spring, none of these have
26 been verified. Their presence above the 3,000-foot level requires
27 the use of the contour line as the boundary for the National
28 Register district. The nominated portion of Kuchumaa includes 510
29 acres, with the eastern section, consisting of public lands,
30 containing 190 acres. The western, state-owned parcel is
31 demarcated by north-south section lines. This area contains 320
32 acres. The southern boundary conforms to the international border.
33 Private lands occupy a large portion of the lower slopes of the
34 mountain below the 3,000-foot contour line.

35 The following section was taken from a report for the California Division of
36 Forestry report prepared by ASM Affiliates, Inc. (Hector and Garnsey 2006) for
37 Tecate Peak and land to the west. The following excerpt provides an excellent
38 summary of the known information on Tecate Peak or Kuchumaa and is repeated
39 here as emphasis of the importance of this landform and surrounding area.

40 Kuchumaa was first identified as a sacred site in ethnographic
41 literature by Shippek (Cuero 1970) during her study of the Kumeyaay
42 Indians. The site, commonly known as Tecate Peak, is located at
43 an elevation of 3,885 feet above sea level, adjacent to the
44 International Border and between the towns of Dulzura and Potrero
45 in San Diego County; the southern portion of the mountain lies
46 within Tecate, Mexico. To the Kumeyaay, the peak is one of

extreme religious and spiritual importance, as is denoted by the various translations of Kuchumaa, meaning, “high, exalted place” (Winkler 1980) and “the ones that cure” or “the ones that life up” (Staniford 1977:44). Kuchumaa remains an extremely important religious site to the Native Americans in the region and is also the destination of followers of New Age religion. The mountain plays a part in a creation myth of the Kumeyaay (Fenly 1982). According to the Kumeyaay creation story, Kuchumaa became a sacred mountain because it was selected as such by Maiha (Fenly 1982), one of the “great creator gods” (Dubois 1908:223). The source of Kuchumaa’s power is not known. Kumeyaay elder Rosalee Robertson stated, “This is the hardest question. Its power comes from the spirit. From God... In the creation myth of the Kumeyaay, there was the prophecy of an all-powerful wise man who would arrive to Earth to show Indians the way to peace. This man came to be known as Kuchumaa....all Indians from as far south as central Baja California and as far east as Yuma came to the mountain centuries ago when they were called by the man.” (Fenly 1982).

Most of the evidence for the significance of Kuchumaa derives from oral tradition rather than archaeological remains. To date, little archaeological evidence has been identified to speak to the importance of the site in the ritual activities of the Kumeyaay. One small prehistoric temporary habitation or special use site (CA-SDI-3488) has been recorded approximately 150 m northeast of the peak itself (Foster and Jenkins 1984). The presence of rock art was reported by Dutton in 1982 (National Park Service 1992), and stone features and artifacts, including one projectile point and ceramic sherds, have also been reported (Winkler 1980). One of Hohenthal’s informants described finding a stone olla on the slopes of Kuchumaa in the mid-1940s, about which he speculates that it “may have actually been an example of the Chumash steatite bowls which occasionally filtered south through native trade” (Hohenthal 2001:88). Hohenthal (2001:89) also reported that a Sr. Barrios, who owned a ranch at the base of Kuchumaa, had also “collected metates, manos and stone points and blades of various sorts.” No systematic cultural resource surveys have been conducted on the mountain to date, and only two surveys have been conducted at the base of the mountain (Talley 1981, negative; and Welch 1981, positive). Large village sites have been reported for the region (Woods 1980), but none have been documented.

Knowledge of the peak and its importance was widespread among the Luiseño, Juaneño, Paipai, Quechan, Mohave, and possibly the Cahuilla, as well as the Kumeyaay (Fenly 1982). Traditionally, only shamans, or *kwisiyai*, were allowed on Kuchumaa (National Park Service 1992) and it was one of the few sites of *kwisiyai* initiation rites. Tofflemeir and Luomala (1936:200) report that the initiation

ceremonies took place on Kuchumaa after one year of training in "...diagnosis of disease, curing methods, dream interpretation, tribal and professional ethics, star lore, spirit communication, hunting secrets, witching sings, and how to prepare magic to insure success at gambling and love." Initiates participated in a period of fasting, purification, and meditation, an aspect of the shaman rites occasionally assisted by the use of datura (jimson weed) to enter a trance or hallucinogenic state. Shipek (1985:70) related that Kuchumaa later forbade the use of datura. According to oral tradition, *kwisiyai* learned healing from the mountain itself (Fenly 1982) after they had shown the capability to become shamans through revelation of their dreams and had participated in initiation rites; very few individuals were born into the position. One especially famous shaman named Kuchumaa lived in the 1800s and, according to McCain (1955:27), the mountain took its name from this individual. More likely, the opposite is true and the man was named for the mountain. Creation stories foretell the coming of Kuchumaa, the man. Hohenthal (2001:83) noted that the "name Cuchumá comes from a capitán grande after whom a large isolated peak nearby, the Picacho de Cuchumá, was also named."

Historically, Kuchumaa was the site of a number of intertribal battles, and when intertribal fighting became "...out of hand, the *kwiyasi* were called to hear Kuchumaa's words of peace...Unfortunately, the shamans were rarely able to hear his words and fighting invariably brewed again" (Fenly 1982). Kuchumaa was also the site of contests held between shamans during which the strength of individual's powers were pitted against one another. One story relates a battle between the shamans on the peak of Kuchumaa that ended in the deaths of some of the medicine men on the promontory below. During one such contest, a group of Kumeyaay *kwisiyai* and Luiseño battled and caused the mountain to split, opening a gorge on the east side of the mountain (Fenly 1982).

A sacred spring named God's Tears by the Kumeyaay (National Park Service 1992; Shipek 1985:70) is located around the 3,000-foot contour level, an elevation that marks the transition from a sphere of spiritual influence, accessible by ordinary people, to sacrosanct ground, where only shaman were allowed. Sacred dances such as the *horloi* (whirl dance) were performed on the mountain by the *kwisiyai* (Shipek 1985:70; Spier 1923; Talley 1981; Woods 1980). This dancing reportedly created a circular pit in the promontory located below the mountain's summit; a radio communications tower now stands here (Fenly 1982). *Kwisiyai* paid visits, both physical and spiritual (by way of dreams and through the use of datura), to Kuchumaa to increase their knowledge and interact with the spiritual world. Finally, the mountain was used as a

1 burial place for special people; *kwisiyai* were cremated and their
2 ashes spread or placed on the slopes of Tecate Peak (Fenly 1982),
3 while ordinary citizens were interred in communal cemeteries
4 (Davis 1921).

5 The length of time that the Kumeyaay have been coming to Tecate
6 Peak for spiritual and religious rites is not known. As Kumeyaay
7 informants noted, it has been used for these purposes as long as
8 there have been Kumeyaay (Fenly 1982). There is no mention of
9 Kuchumaa in ethnographic accounts dating to the early 1900s.
10 Because of the sensitive nature of the place, and the tenuous
11 relationship between European and native people, it is likely that
12 Native American informants would not have spoken of its
13 importance to ethnographers. Even today, the Kumeyaay are
14 reticent on the subject of Kuchumaa: "All (informants) indicated that
15 it was forbidden to speak of the mountain or the beliefs associated
16 with it except on proper occasions. Death would follow improper
17 discussion of the mountain..." (Shipek 1985:68). The peak seems
18 to have ceased being used by the *kwisiyai* for initiation ceremonies
19 after Kuchumaa's death in the 1800s (Fenly 1982) and no *kwisiyai*
20 are living today (Shipek 1985:68). The last shaman contest took
21 place on Kuchumaa during the 1930s (National Park Service 1992).
22 The mountain remains an important religious site to Native
23 Americans, connecting the Kumeyaay and other Indians to their
24 ethnic and religious heritage; it is also recognized and used as a
25 spiritual destination by non-Native people.

26 In the early 1900s, Dr. Walter Evans-Wentz, an authority on
27 Tibetan Buddhism, inherited 5,000 acres of land on Kuchumaa
28 (Evans-Wentz 1981: xx). At his death, he willed 2,261 acres of the
29 ranch to the State of California with the requirements that the
30 property be "maintained forever as a mighty monument to
31 symbolize goodwill and fraternity between the races and faiths of
32 the Occident and the Orient across the wide ocean of peace over
33 which it looms" (Evans-Wentz 1981).

34 Walter Yeeling Evans-Wentz was born February 2, 1878, in New
35 Jersey, but followed his family to La Mesa, California (Peterson and
36 Clebsch 1970). He attended Stanford University, graduating in
37 1906. At Stanford, Wentz developed his beliefs in eastern
38 spirituality and Celtic religions. In his honor, Stanford has
39 established the Evans-Wentz Lectureship in Asian Philosophy,
40 Religion and Ethics in their Department of Religious Studies
41 (<http://arc.stanford.edu/archives/evans-wentz.html>). He added the
42 name Evans to his surname in recognition of his own Celtic
43 ancestry. He received an honorary doctorate in Comparative
44 Religion from Oxford University in 1931. He traveled widely,
45 studying Tibetan Buddhism, and translated many texts into English.

1 Between 1922 and 1965, he worked on several books, including
2 *The Sacred Mountains of the Western World*, which was finished by
3 others and published after his death (as *Cuchama and Sacred*
4 *Mountains*, W. Y. Evans-Wentz, edited by Frank Waters and
5 Charles L. Adams). One of the mountains described in the book is
6 Kuchumaa.

7 Dr. Evans-Wentz later bequeathed the land to the San Diego
8 County Council of Boy Scouts, the San Diego YMCA, and CDF with
9 the intention that the mountain would be preserved in perpetuity,
10 and not developed. The CDF was selected as owner of the property
11 because the agency has resource conservation as a primary part of
12 its mission. His book *Cuchama and Sacred Mountains*, a review of
13 Kuchumaa and other sacred mountains throughout the world, was
14 published by the University of Ohio in 1981. It was later criticized as
15 being “superficial and inaccurate” (Shipek 1983:279). A radio
16 communications station was built on the summit of Tecate Peak by
17 the U.S. Army Corps of Engineers in 1957 (Fenly 1982). A dirt road
18 constructed to provide access to the station remains as the only
19 access to the mountain’s peak. A locked gate was installed to
20 prevent unauthorized access to the radio facilities, but also cut off
21 Kumeyaay access to this sacred site. In 1965, the year of Dr.
22 Evans-Wentz’s death, a number of state and federal agencies
23 established other radio communications stations on the peak and a
24 number of proposals to develop the land on and surrounding the
25 peak and to place transmission lines across the mountain have
26 since been presented.

27 In 1981, a proposal to build a campground on the lower slopes of
28 Tecate Peak initiated the preparation of an Environmental Impact
29 Report by the BLM. As a result of research into ethnographic
30 literature and Native American consultation, BLM sought a
31 nomination of Kuchumaa as a National Register of Historic Places
32 (NRHP) district (National Park Service 1992). The Tecate Peak
33 District encompasses 510 acres of both state and federal lands.
34 The district was determined to be eligible for the National Register
35 based upon its uniqueness as a site of extreme religious
36 significance to the Kumeyaay and other Indians throughout
37 southern California. It should be noted that portions of Kuchumaa
38 are still privately owned. This creates a dilemma for the Kumeyaay,
39 who feel that they risk personal harm by divulging information about
40 their sacred mountain, but that, should portions of it be developed,
41 the power of the site will be diminished.

5. FIELDWORK RESULTS

The survey of Sections A-1 and A-2 was conducted in November 2007 by archaeological professionals of e²M. The survey team was accompanied by agents from the CBP and access was coordinated through the USBP San Diego Sector. The area of survey was defined based on the project maps dated November 2007 and included the identified sections for barrier construction and access roads that could be altered as part of the construction and by future patrol and maintenance efforts. All accessible areas were carefully inspected for evidence of early historic and prehistoric cultural activity using a transect interval that did not exceed 15 meters between team members. The terrain in the proposed project corridor presented some safety concerns resulting in spot checking in some areas of extreme topography. Several weeks prior to the survey a severe wildfire burned all of the vegetation in the West of Tecate proposed project corridor and affected smaller portions of the Pack Trail.

5.1 PREVIOUSLY RECORDED RESOURCES FOR SECTION A-1

5.1.1 The Pack Trail (P-37-015716)

The Pack Trail winds over chaparral-covered slopes on the flank of the San Ysidro Mountains. The conditions are rocky and generally sloped with a series of north/south-trending ridges cut by deep canyons created by run-off to the Tijuana River from the mountain. Some of the drainages contain riparian vegetation, with shrubs and chaparral comprising the most common vegetation types. The area was dry and the ground surface visibility was generally excellent. The elevation range along the trail is from between 440 and 1,330 feet above mean sea level.

According to Mitchell (1997) the Pack Trail averaged approximately 20 inches in width and was formed by clearing brush and pushing "conspicuous" rocks to the side. The trail was difficult to follow in its entirety as heavy vegetation, topography, and "hundreds" of footpaths from migrant human groups as well as large livestock activity, obscure the primary path. Mitchell surveyed the trail in 1996, after a wildfire cleared vegetation from a large section of the trail. The trail was resurveyed in 2002 by Chambers Group, Inc. (2002) and found to be nearly 1 to 3 meters in width along its full length, brush-free, and easy to follow despite the many intersecting footpaths. Chambers noted the possibility that the trail had been altered through the use of picks and shovels to excavate a more suitable path along the steep ridge slopes and to form a more defined pathway. The path ranges from a surface manifestation to a path that is excavated as much as 60 centimeters (cm) into the hillsides. The path runs parallel to the international border and within 1 meter of the border in many sections and more than 550 meters from the border in other areas.

The research completed by Mitchell (1997) concluded that the trail was constructed in the 1930s or 1940s to bring fencing material up the steep mountain flanks, to construct a fence along the border. Mitchell (1997) presented the notion that the barbed wire fence was constructed to maintain a separation of

1 livestock and not as a means of controlling human population movement. Mitchell
2 (1997) and the Chambers Group both concluded that the Pack Trail is not
3 associated with any persons or events of particular importance in regional
4 transportation history and is not the work of a master and in Chambers view the
5 trail has been significantly modified from the original form and, as such, the trail
6 is not eligible for nomination to the National Register of Historic Places.

7 The survey along the Pack Trail for this report confirmed both the configuration
8 and condition of the trail. The inspection and survey followed the existing trail,
9 beginning at the western end. The conditions along the trail are extremely rough
10 with inclines in some portions of the trail in excess of 30 percent (see
11 **Photographs 5-1** through **5-3**). There were no associated historic or prehistoric
12 artifacts identified within the narrow confines of the trail.



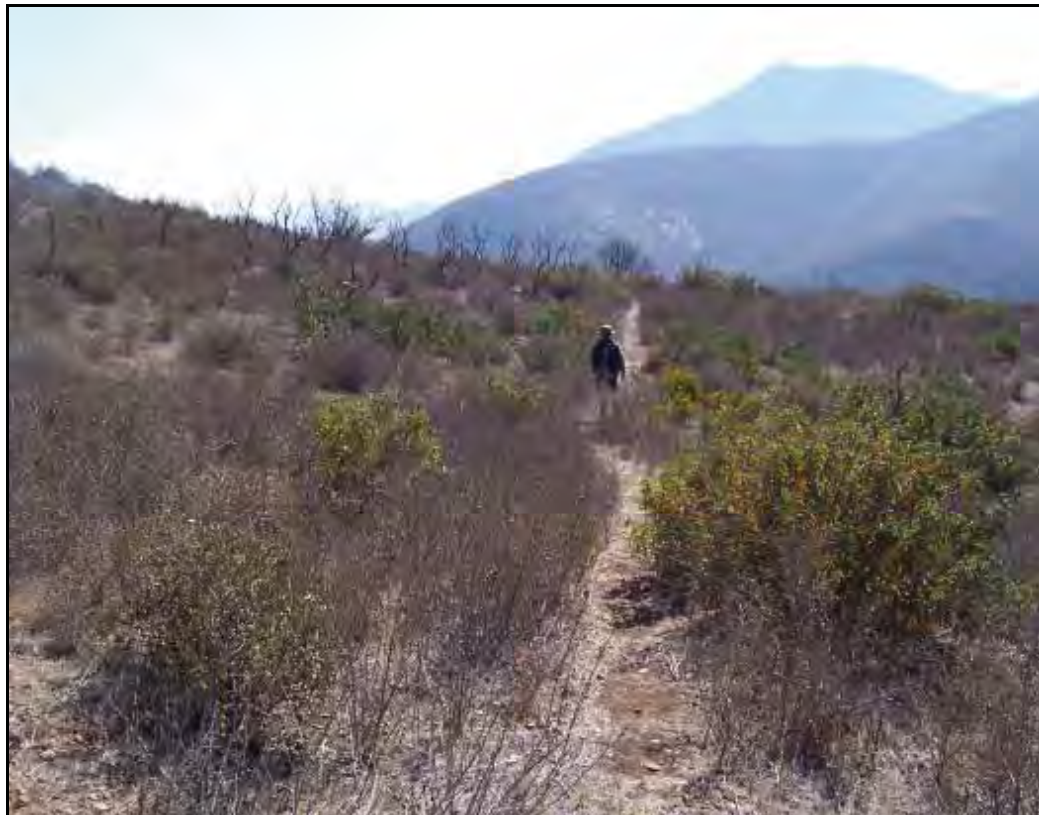
13
14 **Photograph 5-1. Example Showing Trail Condition and Width**
15



1

2

Photograph 5-2. Eastern End of Trail (Trail meanders over hill slope)



3

4

Photograph 5-3. Example of Trail Width and General Condition

5.1.2 CA-SDI-16368

CA-SDI-16388 was recorded by the Chambers Group in 2002 and described as a sparse lithic scatter approximately 18 meters north of the U.S./Mexico international border. As defined by the California State Historic Preservation Office (CSHPO), a sparse lithic scatter contains the following elements: “only flaked-stone; lacks other classes of archaeological materials (ground stone, fire-affected rock, bone or shellfish remains, pottery), lacks a substantial subsurface deposit, and exhibits surface densities equal to or less than three flaked-stone items per square meter” (CSHPO 1998). In most cases, sparse lithic scatters do not meet the criteria for National Register eligibility.

CA-SDI-16368 is described as a single metavolcanic boulder measuring approximately 1.1 by 0.85 meters with several pieces of rock chipped from the surface of this boulder. Approximately 22 pieces of shatter were found scattered over a 31-by-40 meter area surrounding the boulder. The Chambers Group described the shatter as representing an opportunistic prehistoric quarry.

The UTM coordinates and the site area plotted on the USGS for this site were examined during the current study. According to the Department of Parks and Recreation (DPR) site record, the site is bisected by the Pack Trail. There was no evidence of flakes or shatter found at the plotted or UTM-based location.

5.1.3 CA-SDI-16369

CA-SDI-16369 is recorded as a prehistoric ceramic and stone artifact scatter approximately 8 meters north of the Pack Trail and 50 meters of the U.S./Mexico international border. As plotted, the site is outside the project alignment. The site is recorded as containing approximately 70 sherds of prehistoric pottery, approximately 10 pieces of stone shatter, and a core. In addition to the artifacts, a single granite outcrop was described as having a possible milling slick. The site record indicates that a subsurface component to this resource was not expected. As plotted, this site is on the Mexico side of the border and is outside the existing project.

5.1.4 CA-SDI-16370

CA-SDI-16370 is a sparse lithic scatter with two associated milling slicks. This site is recorded at the convergence of three tributaries of the Tijuana River, with materials found in both the United States and Mexico. The site is reported to be 10 meters south of the Pack Trail. During the initial survey (Chambers Group 2002), approximately 16 pieces of debitage (shatter) were found scattered over an area 18 meters by 10 meters. Two milling slicks were identified on a boulder in Mexico. As plotted, this site is in Mexico and the stone artifacts were not relocated during the current survey.

1 **5.1.5 CA-SDI-16371**

2 CA-SDI-16371 is categorized as a sparse lithic scatter with approximately 8
3 pieces of chipping waste and a single metavolcanic core scattered over an area
4 8 by 4 meters. As recorded, the site is plotted on a southeast-facing slope, 30
5 meters northwest of the bottom of Buttewig Canyon (Chambers Group 2002).
6 The site form indicated that a subsurface component to the site was not
7 expected. This site was not relocated during the current survey.

8 **5.1.6 CA-SDI-16300**

9 CA-SDI-16300 is a moderately dense stone artifact scatter at the intersection of
10 Puebla Tree and White Cross Road (see **Photograph 5-4**). This site is not within
11 the Pack Trail route, but along an access road to the proposed project. The site
12 is approximately 800 by 600 meters in size and is on the eastern side of a small
13 hill. Artifacts include approximately 300 pieces of chipping waste and several
14 cores.



15
16 **Photograph 5-4. Puebla Tree Access Road**
17 **(CA-SDI-16300 is to the right side of the road along the ridge)**

18 The site was identified during the current survey at the location plotted on the site
19 record. Although the recorded information for this resource suggests that CA-
20 SDI-16300 is potentially eligible for National Register nomination, eligibility
21 evaluations have not been conducted. This site appears to be one of several

1 opportunistic quarries where available fine-grained metavolcanic stone was
2 tested for suitability for prehistoric tool manufacture. There was no evidence at
3 the site of a buried component or of formal tools such as blades, performs, or
4 hammerstones.

5 **5.1.7 Previously Recorded Isolates**

6 Four prehistoric isolates (P-37-15715, P-37-024688, P-37-024689, and
7 P-37-024691) were recorded by the Chambers Group in 2002. Each isolate is a
8 single piece of metavolcanic chipping waste (flake or shatter) with no other
9 associated artifacts or features. None of the isolates were relocated during the
10 current survey. As defined, isolates are not eligible for National Register
11 consideration since they do not contain the potential to address regional research
12 questions.

13 **5.2 NEWLY RECORDED RESOURCES**

14 During the course of the current survey, two newly discovered archaeological
15 sites and two isolated finds were identified and recorded by the e²M team. Both
16 archaeological sites are small, prehistoric quarries with a limited amount of
17 debitage scattered over the ground surface. These quarries represent
18 opportunistic extraction and sampling of the naturally occurring metavolcanic
19 stone to determine its overall suitability for creating flaked-stone implements. It
20 appears that these naturally occurring outcrops were examined for quality stone
21 material, which was reduced with the removal of cortex followed by the transport
22 of usable stone to various field camps and habitation areas for further reduction
23 and tool manufacture. The locations of these field camps and habitation areas
24 are not known, although it is likely there are a number of them in the project
25 vicinity.

26 The individual artifacts found at the newly discovered sites do not represent a
27 specific period of occupation other than an association with the broad prehistoric
28 past. The previously recorded site CA-SDI-16300 and the two newly discovered
29 sites CA-SDI-18578 and -18579 are representative of special use prehistoric
30 quarry areas. The study area contains a number of exposed Santiago Peak
31 metavolcanic cobbles or boulders that are suitable for making prehistoric tools.
32 This is a fine-grained stone, generally blue to blue-green in color which provides
33 a predictable fracture plane and is seen throughout the southern part of San
34 Diego County as a source stone for flaked stone tools. Based on the current
35 survey these small quarry locales do not include an associated buried deposit or
36 other evidence of prehistoric settlement or use.

37 The appropriate DPR forms have been completed and submitted to the South
38 Coastal Information Center for assignment of official trinomials and Primary
39 designations.

1 **5.2.1 Pack Trail- CA-SDI-18578**

2 Pack Trail CA-SDI-18578 represents a location where a limited number of flakes
3 were removed from small metavolcanic boulders (see **Photographs 5-5** through
4 **5-7**). This site is on a small plateau that is bisected by the Pack Trail. The site
5 assemblage consists of approximately 50 pieces of fine-grained metavolcanic
6 debitage. This material appears to have been removed from several moderately
7 sized metavolcanic cobbles. The site appears to have been created by “testing”
8 or extraction of usable stone material for making formal tools such as scrapers
9 and projectile points. With the exception of a few cores and the debitage, no
10 other artifacts were found.

11 Vegetation within the site area consists of burned scrub with little low growing
12 ground cover. Because of recent wildfires, the ground surface visibility was
13 excellent. The artifact scatter measures approximately 20 by 30 meters, with the
14 majority of the artifacts found on the north side of the Pack Trail. Given the soil
15 conditions and the geology of the area the potential for a subsurface deposit is
16 considered very low for this site.

17 Although CA-SDI-18578 is approximately 250 meters to the east of CA-SDI-
18 16370 and contains similar artifacts, this site is believed to be a new resource.
19 While it is possible that the plotted location of CA-SDI-16370 could be offset by
20 250 meters, this is not supported by the current work effort.



21
22 **Photograph 5-5. Pack Trail CA-SDI-18578 - View to the East**



Photograph 5-6. Pack Trail CA-SDI-18578 - View to the Southwest



Photograph 5-7. Core and Chipping Waste at CA-SDI-18578

1 **5.2.2 Pack Trail- CA-SDI-18579**

2 Pack Trail CA-SDI-18579 is a small flake scatter with a scraper and a broken
3 mano. The site is at the east end of the Pack Trail, on a small plateau
4 overlooking the Tijuana River drainage. As with CA-SDI-18578, this site is
5 defined by a number of moderate sized metavolcanic cobbles that appear to
6 have been tested for suitability for the creation of flaked stone tools (see
7 **Photograph 5-8**). The resulting debitage and cores are what define this site
8 area.



9
10 **Photograph 5-8. CA-SDI-18579 - View to the East**
11 **(Example of exposed cobbles tested for prehistoric tool use)**

12 This site is on a small knoll with limited vegetation cover. The area is also used
13 as a helicopter landing pad (Pad 33) by USBP. The Pack Trail passes
14 approximately 20 meters to the north of the site. Surface artifacts consist of
15 approximately approximately 15 pieces of fine-grained metavolcanic chipping
16 waste, a scraper, and a mano fragment, scattered over an area 20 by 30 meters.

17 The two formal tools are a fine-grained metavolcanic scraper (see **Photograph**
18 **5-9**) and a granite mano fragment (see **Photograph 5-10**). The cobbles,
19 debitage, and the scraper are all the same blue-green fine-grained stone
20 material. The mano probably originated near the drainage and was brought to the
21 site. Based on the geology and location of this site, a subsurface deposit is
22 unlikely as there is generally no accumulated soil and no indications of darker,
23 midden-like soil in the site area.



Photograph 5-9. Stone Tool at CA-SDI-18579



Photograph 5-10. Mano Fragment Found at CA-SDI-18579

1 **5.2.3 Newly Discovered Isolates**

2 Two isolated finds, both fine-grained metavolcanic flakes, were found along the
3 survey route. These items were not recorded but were noted on the project
4 maps. No additional artifacts or archaeological resources (prehistoric or historic)
5 were found during the survey.

6 **5.3 SECTION A-2 (WEST OF TECATE)**

7 **5.3.1 Previously Recorded Sites**

8 **CA-SDI-9101**

9 This two locus site is a bedrock milling complex with a scatter of flaked stone
10 artifacts and a second locus with a scatter of flaked stone and one ground stone
11 artifacts. This site was recorded in 1981 by the BLM as part of the Mission Park
12 R&RR application. The site is south of the access road (South Grape View) for
13 Section A-2 and outside of the proposed project corridor with a sufficient buffer.

14 **CA-SDI-9102**

15 This site is several thousand meters to the west of CA-SDI-9102 and is a small
16 scatter of flaked stone artifacts. This site was recorded in 1981 by the BLM
17 during the survey for the Mission Park application. The site is south of the access
18 road for Section A-2 (South Grape View) and is outside the proposed project
19 corridor with a sufficient buffer.

20 **CA-SDI-9968**

21 This site was recorded in 1984 and is known as the Heard Ranch site. The site
22 occupies land on both sides of the international border and surrounds an historic
23 residence that is currently occupied. The site is at the southern end of the access
24 road (South Grape View) for Section A-2 and is on private property. There is a
25 large grove of oak and a stream associated with the site area, though the oak
26 grove was burned in the October 2007 wildfire. There are numerous bedrock
27 milling features on the large granite boulders with a surface scatter of flaked and
28 ground stone artifacts as well as pockets of dark soil which could indicate
29 accumulated midden. Inspection of the site was limited during the survey
30 because of private property restrictions, though surface indications did not
31 demonstrate that this site extends to the access road.

32 **5.3.2 Newly Recorded Sites**

33 The survey of the Section A-2 proposed project corridor resulted in the recording
34 of one new cultural resource site. This site is referred to as GV-1 and was
35 identified along South Grape View Road (see **Figure 5-1**). The site is a bedrock
36 milling station with a light surface scatter of debitage. A total of three slicks were
37 recorded on a single, large granite boulder. The site is on the edge of the existing

1 road with no evidence that it continues into the road right-of-way. **Figure 5-1**
2 provides the location of this site relative to the access road.

3

4 **Figure 5-1. Location of GV-1 on West of Tecate Access**
5 **(confidential information, not for public review)**

6

6. CULTURAL RESOURCES MANAGEMENT RECOMMENDATIONS

The proposed project corridors were surveyed and both previously recorded and newly discovered resource areas were encountered. The following recommendations apply to the project as proposed in November 2007. The following information does not include feedback from the initiated consultation with local tribal groups. The input from these groups is critical to the final formulation of project design and implementation of mitigation and avoidance measures and will be incorporated into the final report.

6.1 RECOMMENDATIONS

Potential impacts on cultural resources associated with the project are limited to ground-disturbing construction and future maintenance and patrolling activities and indirect impacts from increased access. Based on the results of a cultural resources survey of the proposed project corridor and data provided on the site records, archaeological monitoring is recommended at five specific locations (CA-SDI-18578, CA-SDI-18579, CA-SDI-16300, CA-SDI-16388, and CA-SDI-16371) during all ground-disturbing activities associated with the project. All ground-disturbing activity within this portion of the study area should be monitored by a professional archaeologist who meets the requirements for archaeological monitors set by the reviewing agency.

Evaluations for eligibility to the National Register have not been conducted on newly recorded sites CA-SDI-18578 and CA-SDI-18579, or for CA-SDI-16300, -16388, or -16371 on Section A-1 or GV-1 on Section A-2. It is recommended that prior to construction of the proposed fence or use of the Pack Trail and South Grape View in the vicinity of these site areas, the boundaries of the sites should be clearly marked with flagging and/or protective fencing to avoid inadvertent impacts on the resources. Because each of the sites appears to have limited potential for subsurface deposits, it is recommended that an evaluation program be developed to determine their significance. The evaluation program would include additional mapping and excavation of exploratory units to determine the nature and character of any subsurface deposits. In addition, evaluation would result in more accurate definitions of the extent and nature of these site areas. If the individual sites are determined not to be eligible, monitoring would not be required.

The Pack Trail (recorded as P37-015616) was recommended as not eligible for National Register considerations as the result of previously completed study. Impacts on this resource will not require a monitoring or mitigation program, though additional documentation of the trail might be appropriate.

The objective of the evaluation program would be to gather sufficient data to determine the potential National Register nomination eligibility of the five archaeological sites recorded along the Pack Trail using the criteria set forth in

36 CFR Part 800. Eligibility determinations for each site under criterion D (significance or scientific importance of the site) will be established by evaluating each site's potential to contribute data that are meaningful for regional research themes for southwestern California. If an evaluation program is developed, each site will be evaluated for the integrity of the archaeological deposit, the chronological and cultural affiliation of the deposit, site function and subsistence behavior as expressed by the preserved artifacts and ecofacts, its place in the regional settlement pattern, and the presence or absence of items or features with Native American heritage value.

Based on the records and site visits, these resources represent homogeneous, small artifact collections that are believed to have limited potential to provide information that can be applied to regional questions pertaining to settlement patterns, cultural affiliation, culture change, or subsistence. None of the sites listed above are expected to meet National Register criteria.

Since no cemeteries, or isolated Native American or other human remains have been documented within the study area, the potential for impacts on unrecorded Native American or other human remains during proposed construction appears to be relatively low. If Native American or other human remains are inadvertently discovered during the course of project actions, there will be no further excavation or disturbance of the remains or the vicinity until the remains and the vicinity have been evaluated in accordance with California Environmental Quality Act (CEQA) Section 10564.5, California Health and Safety Code (CHSC) Section 7050.5, Public Resources Code (PRC) Section 5097.98, and the Native American Graves Protection and Repatriation Act (NAGPRA), as appropriate.

6.2 PROTOCOLS

Inadvertently discovered cultural resources will be immediately reported to the previously designated environmental/cultural resources management point of contact and will be evaluated by a qualified archaeologist who meets the requirements of the SHPO. If preliminary evaluation indicates that the resource is potentially significant or potentially eligible for nomination to the National Register, a Cultural Resources Treatment Plan (CRTP) will be developed. The CRTP will contain protocols for the treatment of the cultural resource, a detailed description of report and documentation requirements, curation requirements for any cultural materials collected during treatment, and the qualifications for archaeologists involved in the proposed treatment activities, as mandated by the SHPO.

If treatment activities provide information that results in the determination that the resource is eligible for nomination to the California Register of Historical Resources (CRHR) and cultural resources mitigation measures are necessary, the results of such mitigation measures must be analyzed and the findings must be submitted to the SHPO for concurrence. Work may not resume in the vicinity of potentially eligible cultural resources until the SHPO has determined that sufficient mitigation measures have been completed, and has concurred with the

findings and conclusions contained in the mitigation report, as stipulated in the CRTP. Mitigation measures can include relocation of ground-disturbing project activities that results in the avoidance of the resource. If avoidance is not possible, data recovery excavation could be implemented to mitigate potential project impacts on a potentially eligible resource that cannot be avoided.

6.3 SUMMARY

The cultural resources survey completed for this project resulted in the recording of two newly discovered stone artifact scatters in Section A-1 (CA-SDI-18578 and -18579) and one newly recorded site (GV-1) in Section A-2. In addition to these sites, two previously recorded sites, CA-SDI-16388 and -16371 were identified in the immediate vicinity of the Pack Trail and one previously recorded site (CA-SDI-9968) and one TCP (Kuchumaa/Tecate Peak) are known to be associated with Section A-2. The current survey did not identify artifacts associated with CA-SDI-16388 and -16371 although it is possible that both resources were plotted inaccurately. It is also possible that in the time since the original recording, the noted surface items have become displaced and are no longer apparent.

The fifth previously recorded site in the study area, CA-SDI-16300, is plotted near an access route that will be used for project implementation. Although this site, a large stone tool scatter, appears to lack a subsurface deposit and has a limited number and diversity of stone tools on the surface, it was proposed as potentially eligible for National Register listing on the site record. Based on preliminary design information, this site could be impacted if a staging area is placed near its location. It is recommended that the perimeter of the site be staked prior to initiation of construction and access to the area of the site should be restricted for the duration of construction.

Although the proposed project represents a potential impact on five cultural resources sites for Section A-1 and one site on Section A-2, implementation of the stated cultural resources management recommendations and protocols, including archaeological monitoring and the development and implementation of a CRTP for the treatment of any inadvertently discovered cultural resources, will reduce potential project impacts on cultural resources to a level that is less than significant.

The impacts on Kuchumaa have not been defined and the development of protective measures has not been accomplished. Consultation with associated tribal groups has been initiated and ongoing and additional consultation will be necessary to arrive at appropriate project protocols. Additional information regarding design and project limits should be developed to facilitate the presentation of this project to concerned parties with respect to TCP issues.

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**CULTURAL RESOURCES STUDY
APPENDIX A**

CONSULTATION LETTERS WITH ASSOCIATED NATIVE AMERICAN GROUPS

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OCT 23 2007

Honorable H. Paul Cuero, Jr., Chairman
Campo Band of Kumeyaay Indians
36190 Church Road, Suite 1
Campo, California 91906

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Mr. Cuero:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. A map presenting the proposed project site is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable H. Paul Cuero, Jr.
Page 2

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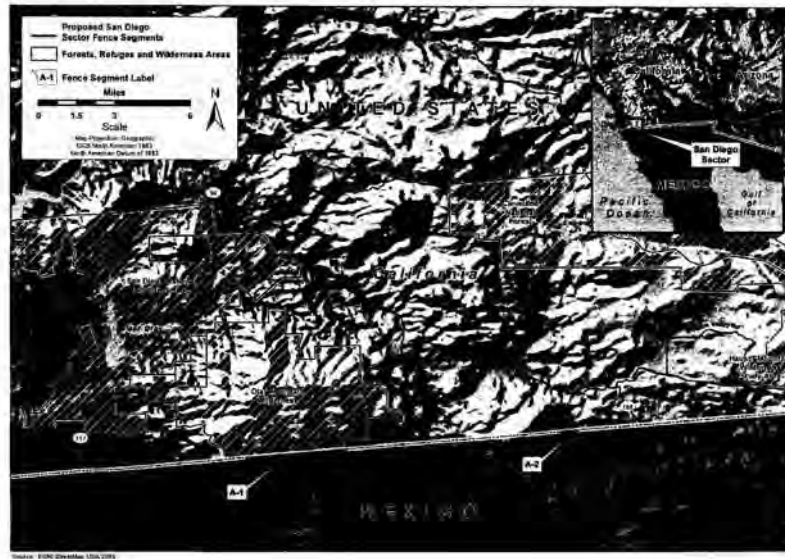
We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O. Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at (619) 216-4028.

Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

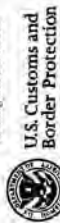
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U.S. Department of Homeland Security
Washington, DC 20239



OCT 27 2007

Honorable Bobby L. Barrett, Chairman
Vicjas Band of Mission Indians
P.O. Box 908
Alpine, California 91903

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Mr. Barrett:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. A map presenting the proposed project site is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Bobby L. Barrett
Page 2

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We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O. Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at (619) 216-4028.

Sincerely,

Robert F. Janson

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20539



U.S. Customs and
Border Protection

06/23/2007

Honorable Leroy Elliott, Chairman
Manzanita Band of Mission Indians
P.O. Box 1302
Boulevard, California 91905

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Mr. Elliott:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. A map presenting the proposed project site is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Leroy Elliott
Page 2

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Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20529



U.S. Customs and
Border Protection

Honorable Johnny Hernandez, Spokesman
Santa Ysabel Band of Mission Indians
P.O. Box 130
Santa Ysabel, California 92070

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Mr. Hernandez:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. A map presenting the proposed project site is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Johnny Hernandez
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Sincerely,

[Signature]
For R. Janson

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20528



U.S. Customs and
Border Protection

Honorable John James,
Cabazon Band of Mission Indians
84-245 Indian Springs Pkwy
Indio, California 92203

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Mr. James:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Puebloa Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable John James
Page 2

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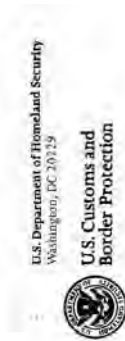
Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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Honorable Allen E. Lawson, Spokesman
San Pasqual Band of Mission Indians
27458 North Lake Wolford Rd., Level #3
Valley Center, CA 92082

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Mr. Lawson:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tualte. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Allen E. Lawson
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Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

2

1

U.S. Department of Homeland Security
Washington, DC 20229



U.S. Customs and
Border Protection

Honorable Howard Maxey, Chairman
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, California 92070

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Mr. Maxey:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Howard Maxey
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Sincerely,

Robert F. Jansun
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

2

1

U.S. Department of Homeland Security
Washington, DC 20529



U.S. Customs and
Border Protection

Honorable Richard Milanovich, Chairperson
Agua Caliente Band of Cahuilla Indians
600 East Tahquitz Canyon Way
Palm Springs, CA 92262

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Mr. Milanovich:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Richard Milanovich

Page 2

A Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* on September 24, 2007. A copy of the NOI is enclosed, which provides additional information about the proposed project, background information, and the framework for Federal environmental review requirements under NEPA.

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O. Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at (619) 216-4028.

Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20529



U.S. Customs and
Border Protection

Honorable Gwendolyn Parada, Chairperson
La Posta Band of Mission Indians
1048 Crestwood Road
Boulevard, California 92905

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Ms. Parada:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Gwendolyn Parada

Page 2

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We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O. Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Peña, USBP San Diego Sector at (619) 216-4028.

Sincerely,

[Signature]

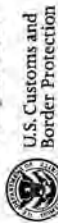
Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20529



U.S. Customs and
Border Protection

Honorable Harlan Pinto, Chairman
Cuyapaipe Band of Mission Indians
4054 Wilhous Road
Alpine, California 91903-2250

**Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance,
and Operation of Tactical Infrastructure, U.S. Department of Homeland
Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego
Sector**

Dear Mr. Pinto:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S.-Mexico international border. The first segment is approximately 4.9 miles in length and would start at Puebloa Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Harlan Pinto
Page 2

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We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O. Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at (619) 216-4028.

Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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00126-0001

Honorable Catherine Saubel, Spokeswoman
Los Coyotes Band of Mission Indians
2300 Camino San Ignacio
Warner Springs, California 92086

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Ms. Saubel,

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Catherine Saubel
Page 2

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We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at (619) 216-4028.

Sincerely,

Robert F. Janson

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20229

U.S. Customs and
Border Protection



U.S. 2 2 2007

Honorable Rhonda Welch-Sealco, Chairwoman
Barona Band of Mission Indians
1095 Barona Road
Lakeside, CA 92040

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Ms. Welch-Sealco:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Rhonda Welch-Sealco
Page 2

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We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EIS for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O. Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Supervising Patrol Agent Oscar Pena, USBP San Diego Sector at (619) 216-4028.

Sincerely,

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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OCT 2 3 2007

Honorable Daniel J. Tucker, Chairman
Sycuan Band of Mission Indians
5459 Delness Road
El Cajon, CA 92019

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Mr. Tucker:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Puebla Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. Maps presenting the proposed project sites are enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Daniel J. Tucker
Page 2

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Sincerely,

Robert F. Janson

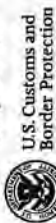
Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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U.S. Department of Homeland Security
Washington, DC 20224



OCT 23 2007

Honorable Leon Acebedo, Chairman
Jamul Band of Mission Indians
13910 Lyons Valley Road
Jamul, California 91935

Subject: Environmental Impact Statement (EIS) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Mr. Acebedo:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Impact Statement (EIS) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 5.6 miles within USBP San Diego Sector. In preparing the EIS, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure consisting of pedestrian fence, vehicle barriers, supporting patrol roads, and other infrastructure in 2 high priority segments along the U.S./Mexico international border. The first segment is approximately 4.9 miles in length and would start at Pueblo Tree and end at Boundary Monument 250. The second would be approximately 0.7 miles in length and would connect with existing border fence west of Tecate. A map presenting the proposed project site is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EIS does not necessarily mean the 5.6 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Leon Acebedo
Page 2

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Sincerely,

Robert F. Janson

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosures

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